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Skeptical Inquirer

THE MAGAZINE FOR SCIENCE AND REASON

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BRIGHT SIDE OF THE ARTIFICIAL INTELLIGENCE APOCALYPSE

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Conspiracies, Folklore, & AI

Benjamin Radford

Practical AI for Skeptics

Mick West

Alternative Therapies for Menstrual Pain

Dr. Jen Gunter

Witchcraft-Based Violence

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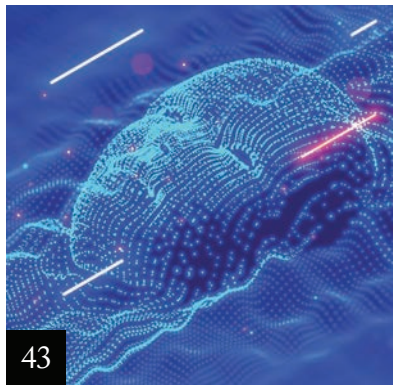
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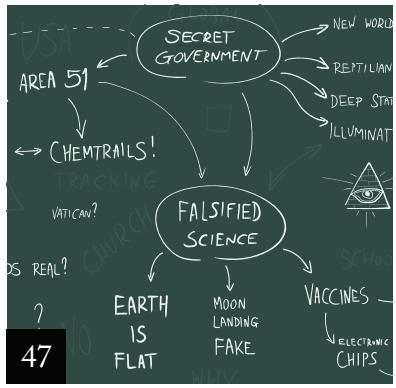

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[FROM THE EDITOR

Paranormal Investigation, Artificial Intelligence, and the Future

Earlier this year, my wife, Farrah, and I joined the Midwest Paranormal Investigators Consortium in the attic of the second-oldest house in Edwardsville. This being my first paranormal investigation, I decided to check my skepticism at the door.

I wasn't surprised by any of the gadgets used, but I was surprised by the sheer number in use at the same time. A dozen devices attempted to elicit spirit communication (see the Secrets Revealed section on p. 66 for a photo), including multiple electromagnetic field (EMF) detectors, a spirit box, an Xbox One Kinect sensor, a cat ball, and a doll named Clarice, said to have been acquired at a flea market with a disturbing spirit already attached. Most actively, two cell phones with the Necrometer app visually displayed different words every few minutes. Farrah read aloud the words from the phone nearest us, and another investigator did the same for the other. A third active device (with help from the Phasmabox software) spoke more words, hauntingly, on similar intervals. Between these three devises, a new word cropped up every minute; some benign (*water*), some nefarious (*blood*), and some difficult to decipher, leaving plenty of room for audio pareidolia.

The experience felt like a creepy version of the free association technique, prompting various investigators to ask the spirits questions such as, "Did something happen to you in water?" and "Are you frightened by the sight of blood?" and "Did anyone else hear the name 'Farrah'?" (the last one was mine). Admittedly, my skepticism didn't stay checked at the door for long, despite that being my demand. It's easier to believe a phone app can generate random words—with a high proportion of creepy words—than to believe someone invented an app capable of communicating with lost souls. When you hear hoofbeats, think horses, not horse-like demons.

However, others in the attic appeared to believe we were communicating with spirits, even though we were using simple phone apps. But what if these apps were to use artificial intelligence (AI)? What if the words weren't random but logical responses to our questions? What if the app used our location to share online information about this house? What if these spirits could pass the Turing test? The apps we used weren't compelling for me, but the future of what's to come might be enough to deceive us all, even when we wear skepticism like a cloak of critical thinking. And this is just one example. Consider all the other ways AI will infiltrate our lives.

The phrase "artificial intelligence apocalypse" is hyperbolic to be sure. The end is not nigh. AI can be used for good as well as bad. But we must brace for what's to come—and for what is already upon us. Fortunately for us all, articles by Guy Harrison, Mick West, and Ben Radford will help us consider the bright side of AI.

—Stephen Hupp

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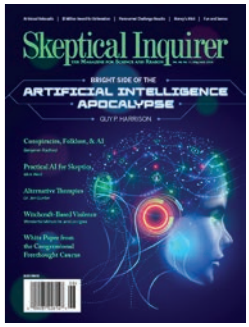

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The FCC Outlaws AI-Voiced Robocalls

Julia Lavarnway

The weekend ahead of the January 23, 2024, primary election, thousands of New Hampshire voters received a call from someone who sounded like a very well-known political leader. The voice urged those who answered not to vote in the primary, falsely telling them that doing so would preclude them from voting in the November general election. According to the Associated Press, investigation showed that the calls, which used an AI-generated voice, had originated from Texas-based Life Corp. and its owner, Walter Monk.

On February 8, 2024, the FCC ruled that such calls are illegal. They did so by using an existing law from 1991, the Telephone Consumer Protection Act, which outlawed junk calls that use artificial and prerecorded voice messages. The new ruling classifies AI-generated voices in robocalls as "artificial," and thus are regulated by the 1991 law.

FCC Chairwoman Jessica Rosenworcel told the Associated Press that people have been using AI-generated voices in robocalls to misinform voters, impersonate celebrities, and extort family members. "It seems like something from the far-off future, but this threat is already here," she said the day before the decision was issued. "All of us could be on the receiving end of these faked calls, so that's why we felt the time to act was now."

In the aftermath of the AI-generated calls, New Hampshire Secretary of State David Scanlan told the Associated Press, "New Hampshire had a taste of how AI can be used inappropriately in the election process. . . . It is certainly appropriate to try and get our arms around the use and the enforcement so that we're not misleading the voting population in a way that could harm our elections."

The Associated Press reached out to Kathleen Carley, a Carnegie Mellon professor who specializes in computational disinformation, more information. She told them that detecting AI abuse of voice technology is possible now "because the technology for generating these calls has existed for a while. It's well understood and it makes standard mistakes." She went on to warn: "But that technology will get better." And so must we. ■

Julia Lavarnway is managing editor of Skeptical Inquirer.

Fake Rescue Requests via Social Media during the 2024 Noto Peninsula Earthquake

Tomoyasu Tobari

On January 1, 2024, at 4:10 p.m. local time, a magnitude 7.6 earthquake struck the Noto region of Japan's Ishikawa Prefecture. On January 11, the Emergency Disaster Control Headquarters reported that 222 people had been killed and 238 were seriously injured by the resulting tsunami, landslides, and collapsed houses.

Social media was effectively utilized in this earthquake. In particular, on X (formerly Twitter) survivors posted relief requests that included their names and the areas affected. Users who viewed the posts shared them, resulting in the quick rescue of many people. Unfortunately, some malicious accounts posted many fake rescue requests.

Weighing in on the issue, Japanese Prime Minister Fumio Kishida used his official X account to discourage fake posts: "Untrue and uncertain information is spreading on social networking services, such as nonexistent addresses and unrelated images that call for rescue. Such malicious false information will never be tolerated. The government urges all citizens to check information from public institutions and not to be misled by false information."

Overall, rescuers wasted precious time and resources trying to determine the authenticity of the requests. While some fake posts were undoubtedly pranks, some might have been due to factors such as X's impression-based monetization program, which was launched in 2023. ■

Note

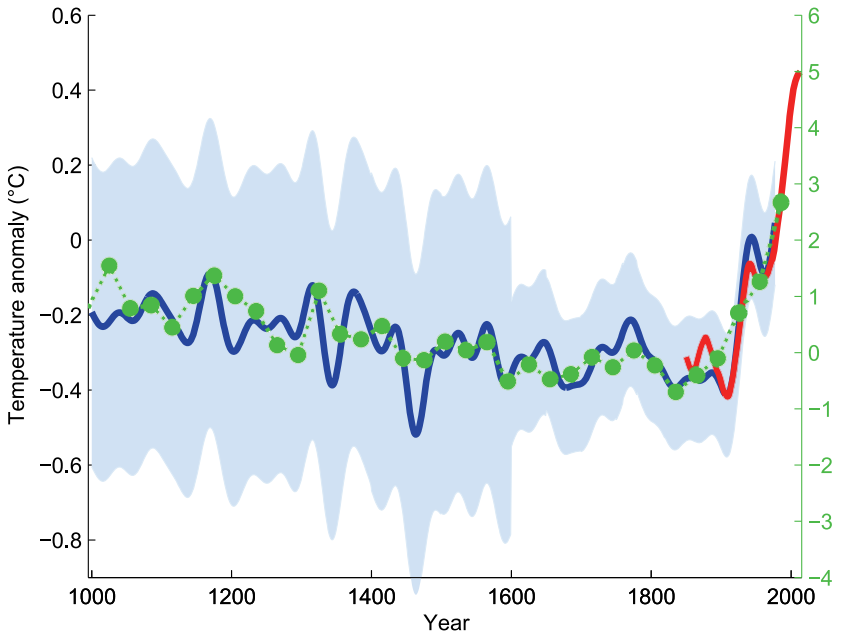
This article was written in Japanese and then translated into English using Deel.com and Grammarly.com.

Tomoyasu Tobari, MAS, has been investigating the paranormal through a skeptical lens while working in the private sector in Japan since receiving his master's degree. He is currently actively collecting information and reporting investigations on paranormal phenomena on X (@nazoshinsi) and his blog (https://tobari3209.hatenablog.com/). He can be found on Bluesky @tobari6378.bsky.social.

CSI Fellow Michael Mann Awarded $1 Million in Defamation Case

John Cook

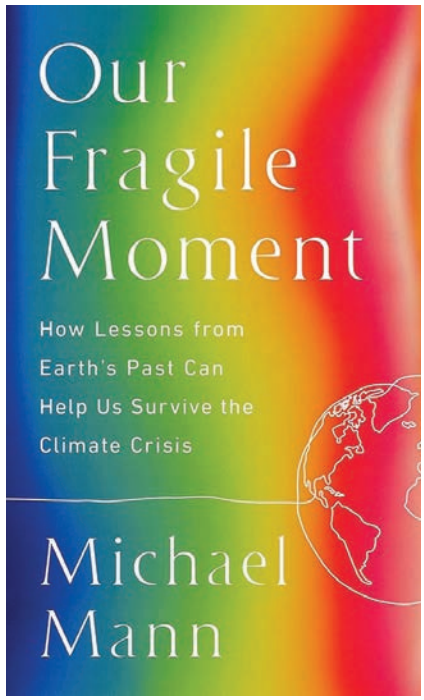
Michael E. Mann. Image credit: Joshua Yospyn



The original northern hemisphere hockey stick graph of Mann, Bradley & Hughes 1999, smoothed curve shown in blue with its uncertainty range in light blue, overlaid with green dots showing the 30-year global average of the PAGES 2k Consortium 2013 reconstruction. The red curve shows measured global mean temperature, according to HadCRUT4 data from 1850 to 2013.

In a significant victory for science, climate scientist Michael Mann was successful in his defamation lawsuit against bloggers Rand Simberg and Mark Steyn. A six-person District of Columbia jury unanimously awarded $1 million in punitive damages to Mann for defamatory blog posts published in 2012 by Simberg on the Competitive Enterprise Institute website and by Steyn on *National Review* online. The blog posts claimed Mann falsely manipulated data related to his well-known "hockey stick graph," first published in *Nature*, which demonstrated unprecedented global warming over the past 1,000 years. The Intergovernmental Panel on Climate Change (IPCC), awardee of the Nobel Peace Prize in 2007, acknowledged Mann for contributing to the work that led to the award.

The defamation case ended up being about more than the personal reputation of an individual scientist, with the defense trying to shift the focus away from defamation and instead to the integrity and validity of climate science. The jury found that Simberg and Steyn's statements were made with "maliciousness, spite, ill will, vengeance or deliberate intent to harm." Following his victory, Mann emphasized the importance of defending science against malicious attacks. The trial happened within the broader context of attacks on climate science and scientists—designed to erode public trust in science—being a prominent part of climate misinformation. Mann became a CSI fellow in 2017. His latest book is *Our Fragile Moment: How Lessons from Earth's Past Can Help Us Survive the Climate Crisis.* ■



John Cook is senior research fellow at Melbourne School of Psychological Sciences.

Miracle of the Weeping Mary in Mexico Explained

Benjamin Radford

In a news category breezily labeled "Weird but True," the venerable *New York Post* was among many media outlets that in November 2023 shared sensational headlines about a miraculous weeping Virgin Mary statue. The *Post* reported that "Churchgoers in Mexico claimed to have witnessed a miracle after spotting a statue of the Virgin Mary that appeared to have real tears rolling down her cheeks. Accompanying footage shows the statue, named the Virgin of Dolores, encased in glass, with a water droplet seemingly emerging from the statue's eye and running down her face."

Image Credit: CEN

The miracle, in the small town of El Chanal, south of Guadalajara, allegedly began when a young boy first noticed a tear flow from the statue. To the reported astonishment of some, several tears began flowing as the devout prayed. Speculation about why the statue was crying focused on the violence plaguing that country, accompanied by pleas for salvation. Many news pieces included video footage of the tears taken by one or two curiously passive churchgoers.

Perhaps more surprising was that the *New York Post* quoted CSI Fellow ("and Shroud of Turin naysayer") Luigi Garlaschelli, who noted that "You need a hollow statue made of plaster or ceramic, which must be covered on the outside with a waterproof layer. By filling the statue with water through an imperceptible hole at the top, the porous material will absorb it, but the outer layer will prevent it from coming out." If the glaze near the eye were to be scratched, the water would leak out and give the appearance of tears. However, it seemed unlikely that this statue was filled with water; the phrasing suggests that the *Post* writer simply cribbed generic information about other unrelated weeping statues from previous interviews (Garlaschelli confirmed to me this was indeed the case).

In any event, the Catholic Diocese was also skeptical. A priest from the Diocese of Colima examined the statue and determined that "at the time it was made, the [artist] placed some silicone tears on it," according to a November 16 report from the Catholic News Agency. "It's not that those tears flowed because of the events that have happened [e.g., cartel violence]; she already had them." The priest explained that "the people of the community started the rumors of this supposed miracle," and that while "we appreciate the interest, it's not a miracle."

The widely circulated claim of "a water droplet seemingly emerging from the statue's eye and running down her face" is simply and factually false, as a close examination of the videos reveal (though the power of suggestion and handheld footage easily obscures this). The fact that the tears were part of the statue all along explains why the churchgoers present were not shocked by the "miracle" happening in front of them. They were just admiring and photographing statues at the church, one of which had silicone tears on it.

It was only when the ordinary, real footage of the ordinary, real (i.e., non-crying) statue was taken out of context and misrepresented as sensational evidence of a miracle that anyone took notice. Of course, a new visitor may not know that the tears are part of the Our Lady of Sorrows statue and (if they don't ask) might sincerely think it's a miracle.

There is a long history of weeping icons in the region, including statues made in Mexico (see "Small Town Virgin Mary 'Miracle': Olive Oil" in the September/October 2018 Skeptical Inquirer). While most are hoaxes and some are accidents, this one is different. What was touted as a lesson in the power of miracles is instead a lesson in skepticism, critical thinking, and media literacy. ■

Benjamin Radford has been deputy editor for Skeptical Inquirer for twenty-five years and is author of over a dozen books, including *Scientific Paranormal Investigation: How to Solve Unexplained Mysteries*.

News Bites: From Neuralink to Netflix's *3 Body Problem*

Stephen Hupp

Neuralink Implant. On January 29, Elon Musk, cofounder of Neuralink, shared the news that the first Neuralink implant has been placed inside a human's skull with promising results. The stated goal is to give recipients the ability to control a computer with their brain. Musk has been criticized for lack of transparency and for releasing the news on his social media platform. (For more, see "Elon Musk Says the First Human Has Received an Implant from Neuralink, but Other Details Are Scant" from the Associated Press.)

New Artificial Intelligence Text-to-Video Generator. On February 15, OpenAI previewed their new text-to-video generator called Sora, which makes brief realistic videos based on just a few words of text. According to a statement on their website, as a safeguard they are "building tools to help detect misleading content such as a detection classifier that can tell when a video was generated by Sora." (For more, see "Sora Is ChatGPT Maker OpenAI's New Text-To-Video Generator" by the Associated Press.)

FDA Warning over Two 'Smart' Devices Measuring Glucose. On February 21, the U.S. Food and Drug Administration provided a warning regarding smartwatches and smart rings "that claim to measure blood glucose levels (blood sugar) without piercing the skin." (For more, see "Do Not Use Smartwatches or Smart Rings to Measure Blood Glucose Levels: FDA Safety Communication" by the FDA.)

First U.S. Moon Landing in Over Fifty Years. On February 22, a private U.S.-based company, Intuitive Machines, landed a spacecraft on the Moon. No humans were aboard. This is the first U.S. Moon landing in over half a century, and the first private company to achieve this accomplishment. Japan also landed a spacecraft on the Moon about a month prior. (For more, see "Private Lander Makes First US Moon Landing in More Than 50 Years" by the Associated Press.)

APA Tackles Misinformation. On February 24, the Council of Representatives of the American Psychological Association (APA) passed a "Resolution on Combating Misinformation and Promoting Psychological Science Literacy," based largely on a related consensus statement written by a team led by Sander van der Linden. The same day, the APA also passed the "Policy Statement on Affirming Evidence-Based Inclusive Care for Transgender, Gender Diverse, and Nonbinary Individuals, Addressing Misinformation, and the Role of Psychological Practice and Science." (For more visit apa.org.)

New Animal Discovery: Amphibian Nursing Its Young. On March 7, the journal *Science* reported on an egg-laying, snake-like amphibian (*Siphonops annulatus*) that produces a milk-like substance for its young, making this discovery the first of its kind. The offspring even use high-pitched "begging" sounds to elicit the milk-like substance. They are objectively the cutest amphibians on earth! (For more, including a video, see "Watch a Snakelike Creature Feed 'Milk' to Its Young" by *Science*.)

Pentagon Finds No Extraterrestrial UAPs. On March 6, The All-Domain Anomaly Resolution Office (AARO) of the Department of Defense released a report regarding their investigation into unidentified anomalous phenomena (UAP). The conclusion of the report states that "To date, AARO has not discovered any empirical evidence that any sighting of a UAP represented off-world technology." (For more, visit aaro.mil.)

Odysseus Landing. Credit: Intuitive Machines

Biologists Sign Statement on Responsible AI Use. As of March 18, over 150 scientists have signed a statement promoting the responsible use of AI. The statement ends by saying, "We will work together with global stakeholders across academia, governments, civil society, and the private sector to ensure that this technology develops in a responsible and trustworthy manner and that it is safe, secure, and beneficial for all." (For more, visit https://responsiblebiodesign.ai/.)

Netflix's *3 Body Problem* Explains the "Wow! Signal" Mystery. On March 21, Netflix dropped the sci-fi series *3 Body Problem* based on the popular book series of the same name. In the show, the so-called "Wow! signal," received by the Search for Extraterrestrial Intelligence (SETI) Institute, is confirmed to be of an extraterrestrial nature. (For more, watch the *3 Body Problem* on Netflix.) ■

Amardeo Sarma Named CSI Representative in Europe

The Committee for Skeptical Inquiry (CSI) has named Amardeo Sarma as the CSI Representative in Europe. Sarma is already a member of CSI's Executive Council and a CSI fellow. "Amardeo has been active for many years within the skeptical community," said Barry Karr, CSI's executive director. "He attended a CSI(COP) conference way back in 1987, and I have had frequent contact with him since then."

Sarma is an engineer and former chair of Germany's Society for the Scientific Investigation of Pseudosciences. "On the world stage, there are few who have his credentials," said Karr. "He was one of the main driving forces behind, and organizers of, numerous European skeptical conferences as well as a number of World Skeptical Conferences. He was also one of the primary organizers of the European Council of Skeptical Organizations. Even now I refer budding skeptical organizations within Europe to Amardeo for his advice and onboarding experience to help bring the group into the European Skeptical Community."

Credit: Evelin Frerk

In an article titled "Skepticism Reloaded" about the future of scientific skepticism, Sarma first wrote for Skeptical Inquirer in the July/August 2018 issue, arguing that "We need to begin by framing our cause and our identity as skeptics worldwide." He has also published SI articles about climate change and disinformation about Fukushima.

When asked about his new position, Sarma shared that "CSI—then CSICOP—and the Skeptical Inquirer have fascinated me since the first time I held an issue in my hands in 1982. People like Ken Frazier, the magazine's longtime editor, and James Randi have inspired me. With this new position, I look forward to furthering the cause of science and critical thinking in Europe and worldwide." ■

Critical Thinking Conference in Argentina: An Antidote against Current Scams

A series of free presentations on critical thinking open to the public will take place in Buenos Aires, Argentina. The role of artificial intelligence, flat-earth theories, UFOs, anti-vaccine arguments, alternative medicine, and other topics will be part of the event held on May 18 and 19 at the Argentine Scientific Society located at 1145 Santa Fe Avenue. Presentations will delve into current issues and various pseudoscientific topics with a strong connection to popular culture. The conference will feature Dan Baker, former pastor and American musician, who currently leads the Freedom From Religion Foundation (FFRF). Stephen Hupp, psychologist and editor of the Skeptical Inquirer, will also be part of the event. Alejandro Borgo, journalist, editor of Pensar.org, and general organizer of the conference, will serve as the master of ceremonies, giving a presentation titled "Cultural Threats and Expectations for the 21st Century." According to Borgo, "the talks are focused on scientific outreach with a popular, friendly approach, aiming to allow people with different interests to join and participate. Our goal is to reflect on the dangers of magical thinking and combat pseudosciences." Also participating will be Daniel Altschuler (physicist), Celso Aldao (researcher), Víctor García–Belaunde (psychologist), Diego Sarasola (psychiatrist), Ernesto Gil Deza (oncologist), Claudio Sánchez (science communicator), Sofía Martínez (astronomer), and others. The event is supported by the Center for Inquiry, the Argentine magazine Pensar.org, and the FFRF. ■

Note

This announcement was abridged from a press release by the conference organizer.

New Contenders for the Investigations Group's $500,000 Paranormal Challenge in 2023

JAMES UNDERDOWN

In the world of sports, having zero successes over the course of an entire year would be the mark of abject failure. You'd see coaching changes, player replacements, and a tidal wave of criticism. A retailer who sold no products would be out of business. A plumber who made no successful repairs or installations, a doctor who alleviated no illnesses, a lawyer who won no cases—all would have their abilities thrown seriously and justifiably into question. And so it is with those who claim paranormal powers; they have again passed zero tests in a calendar year.

As the Center for Inquiry Investigations Group (CFIIG) enters its twenty-fifth year of investigating and testing paranormal claims, it chalks up 2023 as an unusually prolific year for testing applicants for its $500,000 Paranormal Challenge. The eight tests the CFIIG conducted in 2023 is far more than any other skeptic group in the world. Here is a look at three notable results.

Credit: littlestocker - Adobe Stock

Moving a Cloud Telekinetically: Failed Attempt (10/28/23)

The applicant first made a request in February 2023 and then later requested a different CFIIG responder in June. We accommodate such requests when possible. She sent numerous videos showing clouds dissipating or slowly drifting across the sky, claiming *she* was the one making these changes. We pointed out that clouds form, move, and evaporate independent of human interaction and that there is no way we could tell if it were she, or natural forces, doing the work from just a video. She was also informed that to pass our test, she would have to make the clouds move in a highly unusual manner. Her response was to send more videos showing basically the same thing. This back-and-forth continued for some time, with her sending video of cloud activity we believed to be well within the realm of natural causes. She nevertheless insisted we test her.

The CFIIG tries to work with applicants who live outside Southern California to help them be tested—either by field representatives who live closer to the applicant or by testing remotely over Zoom. Because several members of the group planned to be in Las Vegas (the applicant's hometown) at CSICon 2023 in October, we agreed to conduct the test during the conference.

We designed a protocol that would require her to rapidly move a cloud of our choosing from one part of the sky across the horizon. She would have five

minutes to do this for each attempt, and she would get five tries. For her to pass the preliminary demonstration, she would have to successfully demonstrate her power three times out of the five attempts. She agreed to the protocol.

The applicant met members of CFIIG in the pool area of the Flamingo Hotel. We decided to move to the top of the neighboring parking structure, which was tall enough to provide an unobstructed view of the eastern sky. When she was ready, we randomly picked a cloud in the distance and confirmed we were all talking about the same cloud. We used a nearby light post as a reference point.

The applicant's task was to move the cloud to the left (or north), all the way toward a building nearer to downtown Las Vegas. After the applicant stared intently and waved at the cloud for five minutes, time expired. The cloud had drifted normally only a short way and had not gotten anywhere near the target location. We asked her if there was anything interfering with her efforts, and she said no, so we started the second trial. Neither the second nor the third trials were successful, meaning that she could not pass the challenge. She indicated that her ability worked much better if the clouds were near the Sun. Because she had never stated this prior to agreeing to the protocol, we did not offer to retest her at the time.

Warping Glass Telekinetically: Failed Attempt (11/18/23)

The applicant indicated that he could warp or bend glass with the power of his mind. His preferred targets were long-neck bottles of beer, so the CFIIG team provided ten clear, empty bottles. Tests that involve very precise measuring can sometimes be tricky, because even the same person taking the same measurements can get slightly different results. We numbered the bottles and marked the spots that would be measured. As the applicant watched, we took "before" measurements and wrote them down on a scoresheet.

The applicant agreed that he would have five minutes to warp each bottle to plus-or-minus 5 percent (or more) of its starting size at the designated measuring spots. We felt the figure was enough leeway to cover any measuring discrepancies. Obviously, application of heat or any other outside means to warp the glass would not be allowed.

The applicant needed to alter at least one measured dimension in nine of the ten bottles to pass the preliminary demonstration. He was not able to warp any of the bottles. The tiny differences in the dimensions were due to the slight asymmetry of the bottles and the difficulty in placing the calipers on the *exact* same spot for each measurement. In any case, the differences in the numbers were a small fraction of the 5 percent change needed to pass.

Moving a Chair Telekinetically: Failed Attempt (11/18/23)

The applicant applied for the Paranormal Challenge in June 2023, and as with many challengers, his application evolved over time. Initially, he claimed he could direct a blowtorch flame at his hand without getting burned. This application was denied, because the CFIIG has a strict policy to not accept any claims where a person might get injured.

After several months of back and forth, the CFIIG agreed to test his claim of long-distance telekinetic ability. Because he was unable to travel to Los Angeles, he agreed to a remote test conducted via Zoom. He would demonstrate his ability from his home in Texas to move a chair in front of us in Los Angeles.

He agreed that he would have to make a swivel chair rotate on command. He would get five tries—each lasting five minutes—to spin the chair at least three inches. To demonstrate this, we suspended a pendulum over a bowl on the floor. The pendulum hung from a metal rod that was taped to one of the chair's arms and could swing freely just above the center of the bowl, which had a three-inch radius. His task was to rotate the chair such that the pendulum would move the three inches across the inside of the bowl, making contact with its edge. He could move it in either direction, and the test would be deemed

Credit: alswart - Adobe Stock

a success if he was able to do that three times in five attempts.

The test began with the CFIIG demonstrating that the chair being used for the test would easily spin.

Courtesy of the Author

The applicant indicated that he was ready and confident he would do well. We started the five-minute timer. He appeared to concentrate intensely, but when the trial ended, the pendulum had moved nary a bit. We asked him if anything was wrong. He said no and that he was ready for the second trial. We started the five-minute clock again, and as before the pendulum did not move at all. The third trial yielded the same result, at which point we informed the applicant that he did not pass the test.

Other Attempts in 2023

In addition to these three tests and to the three tests described in the September/October 2023 issue of Skeptical Inquirer, the CFIIG conducted two other tests in 2023. One was a man who claimed to have the ability to heal a lipoma (lump) on the neck of one of our investigators. The applicant's powers were absent, and the lipoma remained unchanged after several attempts.

We also did a Zoom call with a man who said he could form the bedding on his mattress into easily discernable faces—without touching the mattress. This test had extra conditions attached because we could not properly monitor the area in question from afar. For one, it wouldn't have even counted as a successful test had we seen anything else move onscreen. We were just curious to see if there *were* any changes. Also, we avoid test protocols that are based on pareidolia. What looks like a face to one person is too subjective a question to rest $500,000 on. None of that mattered, because the bedding did not move.

The year 2023 ended with the CFIIG again batting a thousand and seeing no evidence of the existence of the paranormal. ■

Editor's Note

None of these contenders are household names, so we withheld their names. However, it's just as revealing (if not more so) that no well-known people claiming to have paranormal abilities were willing to have their abilities tested under the controlled conditions used by the CFIIG.

James Underdown is the executive director of the Center for Inquiry West in Los Angeles and the founder and chair of the CFI Investigations Group.

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Advocacy for Alleged Witches in Africa: 2023 Update

LEO IGWE

I founded Advocacy for Alleged Witches (AfAW) to defend the rights and dignity of alleged witches and end all forms of human rights abuses linked to witchcraft allegations in Africa. Our small but effective organization works on local, regional, and national levels to not only raise awareness of the problem of witchcraft persecution and magical thinking but also push for legal protections and social reform.

I can write at length about our efforts to change laws, educate the public, form alliances with state and nongovernmental organizations, and so on. All those are vital functions, but amid the stilted-but-necessary corporate-speak and statistics, it can be easy to overlook the human stories, the real people we reach out to help. Here are some of those we helped in 2023.

On a cold night in April, a thirteen-year-old girl, Blessing Odege, was dragged out of bed by her own family members, who accused her of being a member of a coven. Her parents were forced to watch helplessly as she was tortured, and her father was threatened when he tried to intervene. Because Blessing's life was under threat, AfAW temporarily relocated her and her father to another village, where AfAW pressured the Nigerian Police Force to arrest and charge the perpetrators. The case is ongoing.

Azuka Emena, a middle-aged woman, was accused by her son of killing his sister, Azuka's daughter. She was subjected to torture and degrading treatment. Members of her community, mobilized by her son, forced her to step over her daughter's corpse four

SAY NO TO THE MEETING OF
WITCHES AND WIZARDS!!!
WE ARE CHRISTIAN COMMUNITY. DON'T
POLUTE OUR ENVIRONMENT PLEASE.
UNIVERSITY OF NIGERIA BELONGS TO JESUS,
SO WITCHES AND WIZARD,
NO WAY!! NO VACANCY!!!
WE PLEAD THE BLOOD OF JESUS
OVER THE UNIVERSITY OF NIGERIA.
HENCE, WE REJECT ALL FORMS OF
WITCHCRAFT OVERTLY OR
COVERTLY IN JESUS NAME, AMEN

Anti-witchcraft posters near the University of Nigeria. Source: advocacyforallegedwitches.law.blog

times and then to carry it. Two elderly women then stripped the woman naked and forcefully removed her menstrual pad in search of "witchcraft medicine." The mob then ransacked her house and stole her life savings of 700,000 naira (about $700). She was also banished from the community, and, as she was trying to escape on a motorcycle, the mob hurled insults and kicked her off the bike and into a nearby bush. Until October, she was with her paternal family, where AfAW sent her money to live on because she was shunned and unable to work. AfAW later purchased a grinding machine for her (which she had requested) to help her become financially independent. Her son, Nonso, was arrested in the incident but bribed police to release him. In response, our organization petitioned the police and other relevant agencies to ensure her accusers are prosecuted.

Mrs. Martina, in Calabar, was accused of using witchcraft to kill the sons of another community member. The young men had died in a motor vehicle accident, but she was blamed as the cause. When an angry mob came after her, she ran to her daughter's house for safety, but they broke in. They tortured a confession from her, then hacked her to death with pangas (machetes), before dousing her remains with gasoline and burning them. Police were called but were prevented by the mob from rescuing Martina. When AfAW was alerted to this horrific crime, it formally petitioned the state government to ensure her killers were brought to justice. Though the pressure resulted in police making several arrests (but of only a handful of those responsible), the case has stalled, and there seems little will to move it forward to prosecution or punishment. In keeping with its mission to assist victims and their families, AfAW is currently paying for Martina's daughter's catering school, where she learns how to bake on the path to gainful employment.

In 2021, when two elderly women, Janet Nwobi and Ann Soberekon, wandered away from their homes, they were accused of practicing witchcraft. The two women were stripped naked and humiliated. AfAW offered financial support to the families for their upkeep, and dementia was adopted as the theme for this year's World Day against Witch Hunts in August 2023. AfAW also initiated an aggressive awareness campaign about the nature of dementia as a medical illness instead of evidence of witchcraft.

Source: advocacyforallegedwitches.law.blog

In November 2023, AfAW honored a government security worker, Abdulkareen Garba, who saved the lives of two men, Sanni and James, who were accused of penis theft in Kogi state and had been badly beaten. Garba, who was on his way to work, intervened before the mob was able to set them ablaze. For his courage and bravery, AfAW awarded him with the Advocate of the Year Award to appreciate him and inspire others. AfAW also helped pay for the medical care of Sanni and James at the Federal Medical Center in Kogi State.

There are dozens of others whose plights and stories are equally important, but I simply don't have the space to include them all. They are men and women, young and old. Some include: Jude Abigi, an accused witch in Benue state who in October was stripped naked, humiliated, badly beaten, and fired from his job; Dr. Aimo Emmanuel, who was accused of witchcraft and severely assaulted a month later, also in Benue state; a young woman in Imo state, Miss Ikeazota, who was accused of being a flying witch, attacked by dogs, and humiliated by a mob; an old woman suffering from dementia, Ann Soberekon, who was stripped naked and beaten after being accused of witchcraft in River state; and so many others. More come in by the week—sometimes by the day. Often the victims are denied not only justice but any help at all.

Many police turn a blind eye to the attacks, seeing them as little more than family squabbles. Other times, the police themselves believe in witchcraft and suspect that the mob justice is justified. Often they are simply indifferent and must be shamed, bribed, or threatened into protecting victims—who are themselves often shunned and banished from their villages, their meager property taken from them. Advocacy for Alleged Witches is often their only source of help and support. More information can be found at https://advocacyforallegedwitches.law.blog/. ■

Leo Igwe is the founder of the Advocacy for Alleged Witches. He holds a doctoral degree in religious studies and wrote his doctoral thesis on witchcraft accusation in Northern Ghana.

Witchcraft-Based Violence and Persecution in Malawi

WONDERFUL MKHUTCHE

Though many in the West often think of witchcraft belief and witch trials as relics of the distant past, they remain common and dangerous in many areas of the world to this day. An April 2022 survey by Afrobarometer (a pan-African, nonpartisan survey research network) found that over 74 percent of Malawians believe in the existence of witchcraft and that it is a real phenomenon affecting daily life (Chunga 2022). This belief cut across demographics, being shared in both rural and urban areas, and among both the educated and uneducated. The survey results were shocking and alarming, revealing that witchcraft belief was more prevalent than previously thought, going far beyond the rural poor and into the upper levels of government.

Courtesy of the Author

The reality—not of witchcraft but of the effect that its belief has on Malawians—cannot be captured in raw numbers. A brief background is useful for understanding the social, cultural, and political context. Malawi lies in southern Africa, bordering Tanzania, Mozambique, and Zambia. It is a landlocked and has an agriculture-based economy. It's one of the least developed countries in the world.

Until June 1993, the country was a one-party state led by Kamuzu Banda, a purist Presbyterian Christian whose religious views greatly shaped the country's religiosity in several ways. Banda's views also resulted in the prominent position of the Bible as well as belief in Malawian society. Although belief in witchcraft predates Christianity—which first came to Malawi through British missionaries in the 1850s—the Bible is one of the reasons most Malawians firmly believe in witchcraft. According to the 2018 National Census, over 80 percent of Malawians are Christian, and around 20 percent are Muslim. In Exodus 22:18, the Bible seems to confirm the existence of witches in biblical Jewish society and further instructs people to kill them. Because the book is considered infallible by many believers, this verse confirms the cosmological existence of witchcraft for Malawian believers and not just in the social setting of the Bible.

Outside the Bible, secular traditional and cultural stories passed on from generation to generation also reinforce the belief in witchcraft. However, it gets tricky: Even without evidence, the stories in themselves form a worldview that interprets any unusual or unexpected occurrence as witchcraft. For example, witchcraft may be suspected to have played a role in any unexplained death, disease, accident, or change in fortune. Therefore, most Malawians—and indeed many other Africans—are psychologically primed to see its role in their daily lives, sustaining popular belief in witchcraft. For many, the existence of witchcraft is not only self-evident; evidence of it is seen daily.

The belief in witchcraft has been shrouded in mystery, fear, and darkness, because there is no readily available evidence to support the claims. Therefore, mystery, fear, and darkness are used to cover up for the dearth of evidence.

Almost every day, there is witchcraft-based violence somewhere in my country. As someone at the center of the fight against this belief and with some prominence in the community, I receive calls from people who fear that their lives are in danger from someone in their family or village who is accusing them of being a witch or wizard. Most of these stories are related to fights over property, misfortunes in life, and unexplained occurrences.

For example, if young family members want to acquire land that is under the custody of an elderly family member, they may accuse the elder of witchcraft as a pretext to have them stripped of au-

thority over their land—or even killed. Sometimes when a man dies and has left property to his wife, the deceased husband's family starts accusing the wife of witchcraft as a ploy to chase her away from the family and acquire the property.

These two examples are only a small sampling, but they highlight an important aspect of the nature of the accusations and victims: Most of the accused are the elderly, and among the elderly, it is mostly women. If the accused is of middle age, the accusations are also mostly against women and, less often, children. These are the most endangered groups, summarized by a local saying: *Mfiti yaikazi siikhululuka* ("A wizard may forgive, but a witch does not").

Malawian society is highly patriarchal; in most tribes, men have more power than women, and these gender imbalances evolve into victimization when there is a fight over property. Women have little power to fight for property. As a result, witchcraft-based violence in Malawi is also a gender issue, in addition to its superstitious undertones.

In October 2022, another related case happened in the Karonga district in northern Malawi, one of the hotspots for witchcraft-based violence (Igwe 2022). Because the district borders Tanzania, most there earn a living from cross-border trade. Money flows in and out, tempting many into *securing* their wealth through witchcraft—along with the usual cases of families fighting over strange diseases or deaths.

On this particular day, the death of a young family member happened in the district's Mwakamogho Village. Two elderly family members were accused of being behind the death, and the community wanted their blood. From the funeral, they went straight to the home of the accused. It took the village chief's strenuous efforts to keep the people away as he called the police, and soon three officers arrived at the village. Upon their arrival, an angry mob threw large rocks at the officers, injuring two; a third was also hacked with a large pang knife in his head. Unconscious and pouring blood, he was covered with tree branches and left for dead. Hours later, he was rescued and taken to the hospital.

Despite its horrific consequences and details, this rural incident was just one of many. It caught the public's attention only briefly before being buried in people's minds and the news cycle moved on. We at Humanists Malawi—the organization at the center of fighting witchcraft-based violence in Malawi—made phone calls to establish the facts and assist victims where possible. The issue was another unfortunate example to be used for advocating against the violence. No week passes without Humanists Malawi receiving a phone call from someone afraid for their life or that of a relative after accusations of witchcraft. The cases mainly are for these reasons: First, families fighting over property and accusing each other of witchcraft along the way. Second, unexplained diseases or deaths due to inadequate access to medical facilities. Third, life misfortunes believed to be caused by relatives afraid or jealous of the other's success. From these reasons, it can be observed that the root cause of the belief in witchcraft is both the country's and its people's poverty.

We were then contacted by our colleague Leo Igwe, who runs the Advocacy for Alleged Witches organization in Nigeria, about a visit by Benjamin Radford, on holiday from the United States. Radford was on a private trip to Africa and was in Mozambique when the aforementioned incident happened. I found out that he has done incredible work with the Center for Inquiry, where he is a research fellow. He has also written books discussing myths, rumors, and superstitions. The Karonga case was therefore within his area of concern, and because he was in a neighboring country, he decided to stop in Malawi. He joined a colleague and me in visiting the three injured officers in Karonga, and he gave them certificates of bravery and a cash incentive to encourage them to stand up for justice (see the March/April 2023 issue).

On October 29, we set off for Karonga from the capital of Lilongwe, a journey 580 kilometers (360 miles) roughly parallel to Lake Malawi, which runs the length of the long, thin country to the east. Along the way, Radford had firsthand experience of Malawi as we passed through towns and villages. He was curious and adventurous. Together with our driver, Kondwani Chimatiro, we answered all the questions he had. But one thing that especially fascinated him was when we told him that in parts of northern Malawi, some sellers display their goods (such as sacks of coal) unsupervised on the side of the road, and no one dares to steal them. The honor system is enforced through magical beliefs: people believe that if they steal goods, they will turn into something strange, such as a dead person. "That's how deep the belief is," I said to him.

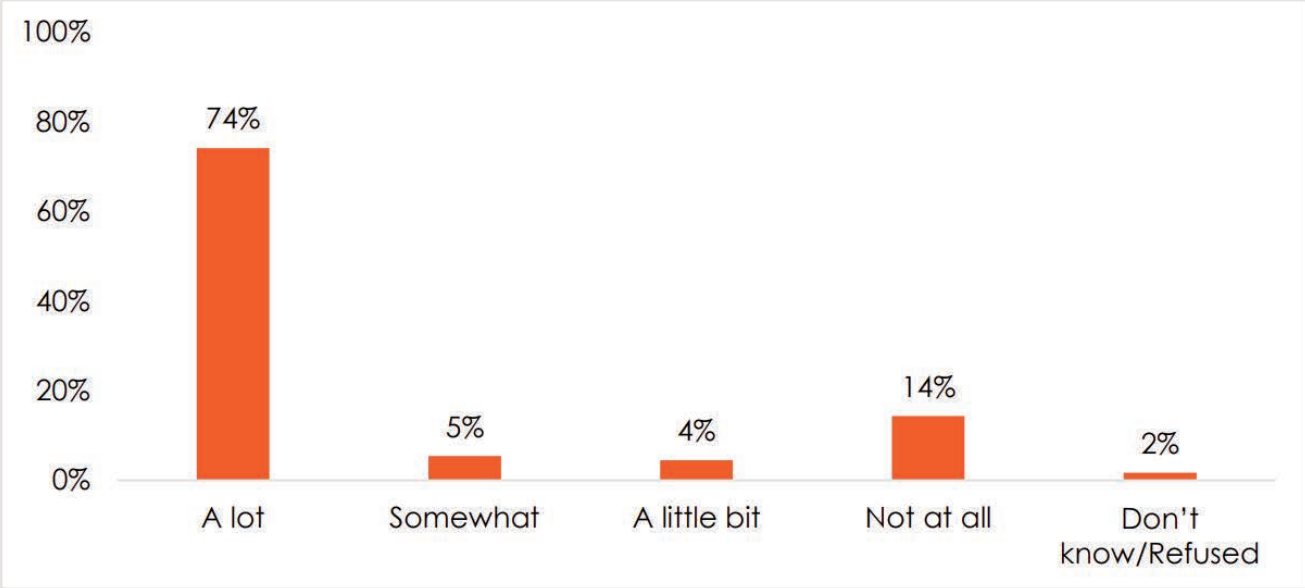
We also told him of the belief held by some people in Karonga and the neighboring district, Chitipa, that one can magically remove someone's bones and leave only the skin. For some time, we laughed at this creepy and curious—yet widely held—belief. This was the nature of our discussion: the Church and witchcraft, politics and witchcraft, and so on. By the time we were in Karonga, Radford had a good idea of the nature of witchcraft belief in the country. When meeting the injured police officers, he was able to appreciate how lucky they were to have come out alive from the fracas (though one remains severely disabled).

Changing Witchcraft Laws

The fight against witchcraft-based violence and the deep-rooted witchcraft belief continues. However, progress has been met with a huge setback: the Malawi Law Commission—a constitutional body—proposed to change the Witchcraft Law from *not* recognizing the existence of witchcraft to recognizing its existence. The present law was established in 1911 by the British Colonial government. The proposed change, as claimed, was reached after gathering evidence that witchcraft exists despite no provision of the methodology of the study or even pictures and videos to support the claim. Further, it was claimed that because most people believe in the existence of witchcraft, it is evidence that witchcraft does in fact exist—and the law must reflect this reality.

However, this is paradoxical and regressive. Those who commit witchcraft-based violence do it in the context of believing that witchcraft exists. The moment we remove the belief in witchcraft, we will have directly dealt with the

Figure 1: Belief in the existence of witchcraft | Malawi | 2022



Respondents were asked: *Please tell me, how much, if at all, do you believe that witchcraft exists?*

violence. The law must reflect our aspirations.

Regionally, Zambia, Tanzania, Botswana, and South Africa also have similar witchcraft laws, sharing the same colonial history. Further, there is the suggestion that the witchcraft laws are clashing with the indigenous culture and traditions in the three countries. However, Zimbabwe is the exception to this regional trend. In 2006, the country rescinded the witchcraft law to recognize the existence of witchcraft to reflect the people's will. This is the direction Malawi is going in if the proposal to change the witchcraft law is not halted.

The proposal to change the law has received wide support because the law agrees with most people's views on the issue. Some people argue that the present law was created and implemented by the colonial government—White men who had no respect for local people's beliefs. However, this is not the true history behind the law. During the colonial days, there were rampant witch-hunting escapades that ended with innocent people suffering mob justice. The law was therefore aimed at controlling this, and it continues to serve this function.

However, many people oppose the law, including those tasked with enforcing it. Although the law says that accusing someone of witchcraft is illegal, no one has been prosecuted for this crime. Such accusations are only settled through discussions with the law taking its full course and only after mob justice has taken place. This exposes a gap in the implementation of the law because it is only used to deal with the resulting violence—not the accusations themselves. This happens because the law enforcers believe in the existence of witchcraft but do not tolerate the violence resulting from the belief.

With most members of Parliament reflecting the Malawian population, the suggested change will easily pass into law, worsening the accusations and the violence. Those arguing for the change of law suggest that the cases will be taken to the court of law for evidence and judgment. But with our courts already overwhelmed, adding another backlog of witchcraft cases will further frustrate those seeking justice. Even worse, witchcraft cases do not have admissible evidence in the court of law. How then will this be done?

Through Humanists Malawi, I have been a rare voice in speaking against this proposal with a simple message: Witchcraft is a mere belief created by people due to a given socioeconomic context. This has been done through media outreach using radio, television, and newspapers. The country does not need to change the law to accommodate this regressive behavior. However, let me also recognize support from an unlikely source: Bishop Martin Mtumbuka of Karonga Diocese of the Roman Catholic Church, who has been preaching against the belief in witchcraft. As a religious leader, his voice is authoritative to the Church's followers. He has reinterpreted the Bible as most people use it to ascertain that witchcraft exists.

For now, this is where we are: a deeply superstitious society; a country pushing for the law to recognize the existence of witchcraft; a society horrified by the violence; and a nation yearning for an end to this appalling reality. But we need to be hopeful and challenge ourselves to live in the present and give the next generation a different world than the one we found. Some things must stop with us. ■

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Igwe, Leo. 2022. My turn: Honour fearless police saving alleged witches. *Nation Online* (October 31). Online at https://mwnation.com/honour-fearless-police-saving-alleged-witches/.

Wonderful Mkhutche is the founding executive director of Humanists Malawi. The organization fights against witchcraft-based violence by promoting humanist values and critical thinking.

Credit: pozdeevvs - Adobe Stock

White Paper from the Congressional Freethought Caucus—Speaker Johnson: Christian Nationalism in the Speaker's Office?

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Editors note: The Congressional Freethought Caucus shared this White Paper with others in Congress in December 2023 and Skeptical Inquirer *in January 2024. The paper involves threats to the separation of church and state in America. Before reading, you are encouraged to first read Wonderful Mkhutche's article in this issue on witchcraft persecution in Malawi. Although the separation of church and state is a fundamental aspect of American government, this is not the case in many parts of the world. As described herein, Thomas Jefferson provided the "wall of separation" metaphor to protect the people against state-sponsored activities, such as witchcraft persecution, that persists in some regions of the world to this day. Extending the wall of separation to present-day America, additional testable claims are highlighted by this paper on topics such as the suitability of same-sex couples to adopt and the use of conversion therapy aimed at turning gay and lesbian people straight. We thank Representative Jared Huffman for granting us permission to reprint this paper on behalf of the Congressional Freethought Caucus.*

Introduction

This white paper was developed by the Congressional Freethought Caucus (CFC), a group of twenty members of Congress who reflect the religious diversity of America—Christians, Jews, Muslims, Hindus, Buddhists, other believers, and nontheists. CFC members share a commitment to protecting the constitutional separation of church and state; ensuring public policy is based on facts, science, and reason; and defending religious liberty in the United States and abroad.

Since Mike Johnson's election as Speaker, much has been written about his deep religious faith. We respect, celebrate, and treasure his right—and the right of every American—to freely practice his faith as guaranteed by the First Amendment.

But, apart from the freedom to pursue his individual private faith, Speaker Johnson's public record on the religious freedom of other Americans raises troubling questions. Although the Free Exercise Clause guarantees an individual's right to worship freely (or to not worship at all), the Establishment Clause prohibits the government from establishing, endorsing, or favoring any religion or dogma over another faith or belief system. For if any religious group can dominate the state, they can—and will—use government power to infringe upon the religious freedoms of other Americans.

It is well understood that these two religious First Amendment clauses reinforce one another and stand best when they stand together. These central First Amendment clauses, and the clause forbidding any "religious test" for public office, created what Thomas Jefferson called a "wall of separation" between church and state.[1] This wall protects everyone's freedom of conscience, belief, and religion against governmental imposition of dogma, orthodoxy, and control.

In November, given our mutual interests in religious freedom, the CFC invited Speaker Johnson to engage in a dialogue with us about an agenda for protecting religious freedom and toleration in America. Unfortunately, the Speaker has ignored our invitation, leaving us no choice but to undertake our own investigation of his pronouncements and actions to better understand his public program.

Although new information continues to surface virtually every day about Speaker Johnson's record on religious freedom and church-state separation, what we already know is troubling and alarming. Speaker Johnson is deeply connected in political practice and philosophy to Christian Nationalism, more so than any other Speaker in American history. He has spent decades working to deny, reject, and undermine the constitutional separation of church and state, including trafficking in fake histories about our nation's founding and distorting the meaning of the Establishment Clause. He has spent much of his career trying to impose sectarian-based moral codes on others. He has a long record of opposing and undermining civil rights and liberties in the name of religion. And he has collaborated closely with hate groups and Christian Nationalist extremists to advance a theocratic agenda by transforming our pluralist constitutional republic into a "biblically sanctioned government."

The findings of our investigation are summarized below. This white paper identifies key unanswered questions to which the public deserves a response, and it provides a framework for the CFC and congressional allies to confront Speaker Johnson's extremist agenda. The CFC will use this white paper to educate members of Congress, congressional staff, and other interested parties. We have also provided a copy to Speaker Johnson and his staff, and to the extent they disagree with any of our findings, we warmly invite their response. Our invitation for a dialogue on the separation of church and state with Speaker Johnson still stands.

Findings

1. Church-State Separation

In describing his decision to run for Congress, Speaker Johnson explained: "I was called to a legal ministry, and I've been out on the front lines of the culture war defending religious freedom, the sanctity of human life, and biblical values."[2] Speaker Johnson has spoken passionately about creating a "biblically sanctioned government" and said repeatedly that the United States is and always has been a "Christian nation."[3] He has urged Christian churches to engage directly in politics, and he is co-leading a bill to explicitly bring partisan politics into churches by repealing the Johnson Amendment (named for Lyndon Johnson), which prevents tax-exempt nonprofits including churches from engaging in partisan politics.[4]

On several occasions, Speaker Johnson has explicitly rejected church-state separation, a basic pillar of American constitutionalism. On the House Floor, he has denounced the "so-called separation of church and state" as "the opposite of how we were founded as a country."[5] He has insisted that the Founders wanted only "to protect the church from an

1. Thomas Jefferson, "Letter to the Danbury Baptists," *Library of Congress*, January 1, 1802, https://www.loc.gov/loc/lcib/9806/danpre.html.

2. Will Hall, "Mike Johnson: Faith, family & freedom motivate run for seat in U.S. Congress," *The Message*, September 30, 2016. Online at https://www.baptistmessage.com/mike-johnson-faith-family-freedom-motivate-run-seat-u-s-congress/.

3. David Corn, "Mike Johnson Conducted Seminars Promoting the US as a 'Christian Nation,'" *Mother Jones*, October 2023, https://www.motherjones.com/politics/2023/10/mike-johnson-seminars-christian-nation-speaker-far-right/. For an archived video of one seminar, see Mike Johnson, *Answers For Our Times*, First Baptist Church Haughton, April 28, 2019, https://archive.is/0WReS. See also Brian Kaylor, "Church Scrubs Sermons by Speaker Johnson But I Saved Them," *Public Witness*, November 9, 2023, https://publicwitness.wordandway.org/p/church-scrubs-sermons-by-speaker.

4. Adam Chodorow, "Mike Johnson Wants to Unleash Ministers on Politics," *Slate*, November 9, 2023, https://slate.com/business/2023/11/mike-johnson-speaker-johnson-amendment-religious-leaders-taxes.html. See also Congressman Steve Scalise "Scalise, Hice, Johnson Reintroduce Free Speech Fairness Act," February 5, 2021, https://scalise.house.gov/media/press-releases/scalise-hice-johnson-reintroduce-free-speech-fairness- act#:~:text=The%20Free%20Speech%20Fairness%20Act%20restores%20the%20full%20constitutional%20rights,of%2 0religious%20non%2Dprofits.%22.

5. Speaker Mike Johnson @SpeakerJohnson, "As we celebrate the 2nd annual observance of 'Faith Month,' this is a great time to explain the true meaning of the so-called 'separation of church and state.'" Twitter, April 18, 2023, https://twitter.com/SpeakerJohnson/status/1648361786393911296.

encroaching state, not the other way around."[6]

Speaker Johnson has also suggested that the Establishment Clause does nothing more than prevent the state from establishing an official religion.[7] This narrow and outdated interpretation of the First Amendment cuts against decades of First Amendment case law. It could unleash the government to sponsor particular religious practices, endorse religious codes such as the Ten Commandments, and legislate government-led prayers for millions of public-school students.

Speaker Johnson's rejection of church-state separation rests on a distorted reading of the Constitution. The Constitution itself plainly debunks his theories and related claims that our government was founded on Biblical principles or as a Christian nation. Nowhere does the Constitution mention the Bible, God, or Christianity. The only references to religion are found in Article VI, which *prohibits* religious tests for public office, and the First Amendment, which *protects* absolute individual freedom of conscience by prohibiting the establishment of religion or any law preventing free religious exercise. Not one of the Founders said they were creating or serving a "Christian nation" in any document, private correspondence, or publicly noted utterance.[8] Speaker Johnson's frequent descriptions of America as a "Christian nation" are obviously false, in addition to being divisive, disturbing, and threatening to many Americans—non-Christians and Christians alike—who reject religious intolerance and theocracy.

Speaker Johnson has also invoked the Declaration of Independence to support his revisionist theory that our country was founded as a "Christian nation." In Johnson's first speech as Speaker, he claimed that Thomas Jefferson's reference to a "Creator" in the Declaration proves that the United States was "founded upon a creed" and reflects "almost theological lucidity."[9] Of course, Jefferson—the author of the metaphor of the constitutional "wall of separation," which Speaker Johnson routinely deplores—was an Enlightenment thinker who wanted to break from centuries of religious warfare, Inquisition, crusades, witchcraft trials, persecution, and intolerance. He was often attacked as an infidel and atheist.

The Declaration was an announcement to the world that the American colonies intended to sever ties to Great Britain and become an independent nation committed to human rights to life, liberty, and the pursuit of happiness. Whether Jefferson intended for the United States to become a Christian nation by simply referencing a Creator or whether he was merely establishing that the rights of humanity are natural—rather than depending on kingly permission—very little turns on the answer. The Declaration itself not only excludes other mentions of religion, church, or theocracy, but it also never became a governing document that defined our rights and laws. That only came later when the Founders drafted a wholly secular document—the Constitution of the United States.

As Speaker of the House and second in line to the Presidency, Speaker Johnson owes it to Congress and the American people to answer these specific questions:

- Does he acknowledge and accept the constitutional separation of church and state?
- What does his oft-stated goal of creating a "biblically sanctioned government" actually mean?
- Does he believe, as many Christian Nationalists argue, that the Bible—not the Constitution—must function as the supreme law of the United States and that the Bible must prevail in the event of conflict between the Bible and civil laws?
- Does he agree that his longstanding goal and "legal ministry" of conforming our nation's laws, norms, and institutions to his religious beliefs is essentially calling for an American theocracy? If not, how is it different?
- Since he views the United States as a "Christian nation," what does that mean for Jews, Muslims, Hindus, Buddhists, and other believers and nonbelievers? Does he support laws that favor Christianity over other religions, or that favor the Bible over other religious texts?

2. Using Public Education and Public Resources to Promote Evangelical Christianity

Although the Constitution bars public schools from mandating or sponsoring religious prayer and limits public schools to teaching the Bible "objectively as part of a secular program," Speaker Johnson has spent much of his career attacking and undermining these essential constitutional guidelines.[10]

Johnson championed a controversial course developed by the National Council on Bible Curriculum in Public Schools.[11] That Bible course was a thinly veiled attempt to impose evangelical Christianity on public school students by promoting a thoroughly evangelical interpretation of the Bible, including a literal reading of the Genesis creation story, which is rejected by many mainline Christians and Biblical scholars.[12] Among his many other efforts in this area, Johnson has also defended a public school accused of religious proselytizing[13] and advocated for legislation to facilitate faculty

6. Disciple's Voice of Hope with Alex T. Ray, "DVOH - God in Politics with Mike Johnson," August 30, 2016, https://www.youtube.com/watch?v=696lilpnoqM.

7. Lauren Sforza, "Speaker Johnson: Separation of church, state 'a misnomer,'" *T*he Hill, November 14, 2023, https://thehill.com/homenews/house/4308643-speaker-johnson-separation-of-church-state-a-misnomer/.

8. Dr. Gregg Frazer, "The Faith of the Founding Fathers," *The Master's University*, https://www.masters.edu/master_tmu_news/the-faith-of-the-founding- fathers/#:~:text=There%20were%20Christians%20among%20the,to%20create%20a%20Christian%20nation.

9. Mike Johnson, "Speaker-Elect Mike Johnson Floor Speech," October 25, 2023, https://www.c- span.org/video/?531374-3/speaker-elect-mike-johnson-floor-speech.

10. *Abington School District v. Schempp*, 374 U.S. 203 (1963).

11. Judd Legum, Tesnim Zekeria, and Rebecca Crosby, "What Everyone Should Know about the New House Speaker, Mike Johnson," *Popular Information* (blog), October 26, 2023, https://popular.info/p/what-everyone-should- know-about-the.

12. Mark A. Chancey, A Textbook Example of the Christian Right: The National Council on Bible Curriculum in Public Schools, *Journal of the American Academy of Religion*, Volume 75, Issue 3, September 2007, Pages 554–581, https://doi.org/10.1093/jaarel/lfm036.

13. Brian Kaylor and Jeremy Fuzy, "Christian Nationalism in the Speaker's Chair," *Word&Way*, October 26, 2023, https://wordandway.org/2023/10/26/christian-nationalism-in-the-speakers-chair/.

participation in student-led public school prayers.[14]

Speaker Johnson's legal efforts to undermine the separation of church and state have extended to other areas as well, such as defending a painting of Jesus Christ displayed in a courthouse. In that case, he argued speciously that the "ideas expressed in this painting aren't specific to any one faith, and they certainly don't establish a single state religion."[15] In another case, he defended funneling state subsidies to a private Noah's Ark theme park that promotes evangelicalism and Biblical literalism.[16] He celebrated this project as "one way to bring people to this recognition of the truth that what we read in the Bible are actual historical events."[17] This is plainly an effort to use state funds to endorse and amplify a religious tenet.

Speaker Johnson has the right to hold any and all extreme religious views, but no right to use public resources to promote them. He should answer the following questions regarding his plans and intentions as Speaker of the House:

- Will he continue attempting to promote or mandate sectarian religious teachings, materials, or practices in our public schools?
- Will he continue advocating for the display of sectarian iconography in public places? Does that include the United States Capitol?
- Will he work to direct subsidies or other public resources to religious enterprises such as the Noah's Ark theme park or the Museum of the Bible?

3. Curtailing Civil Rights and Liberties in the Name of Religion

A recurring theme in Speaker Johnson's decades of work to embed "God in government" is his steadfast support of right-wing Christians imposing their values on others and discriminating in the name of religion. These efforts include relentless attacks on LGBTQ+ rights, opposition to no-fault divorce, extreme restrictions on women's reproductive healthcare, and discriminatory immigration policies.

a. Crusading Against LGBTQ+ Rights

As both a lawyer and legislator, Johnson has focused throughout his career on opposing LGBTQ+ rights. He inveighs against homosexuality as not only a sin but as an "inherently unnatural," "bizarre," and "dangerous lifestyle."[18] As Senior Legal Counsel for the Alliance Defending Freedom, a legal organization which described itself as aiming to "recover the robust Christendomic theology of the 3rd, 4th, and 5th centuries," Johnson defended the criminalization of sex between consenting same-sex adults.[19] In Louisiana, he championed a same-sex marriage ban, defended that ban in court,[20] fought to block same-sex adoptions and marital benefits,[21] promoted discredited "conversion therapy,"[22] and introduced the "Marriage and Conscience Act," which would have created a broad legal safe harbor to discriminate against LGBTQ+ individuals.[23]

As a Member of Congress, he has authored a federal version of Florida's infamous "Don't Say Gay" law, supported criminalization of gender-affirming care, cosponsored legislation to bar transgender students from competing on women's and girls' sports teams, and voted against the Equality Act and Respect for Marriage Act.[24] He even claimed that legalizing marriage equality would require us to protect every "deviant group," which could lead to legalized pedophilia, bestiality, and the downfall of "the entire democratic system."[25]

b. Making Divorce Harder

Like many leaders of the religious right, Johnson opposes no-fault divorce laws, which he views as disrespecting the sanctity of marriage and contributing to America's moral decline (along with things like "radical feminism").[26] But Johnson has taken it even further by promoting the religious institution of "covenant marriage" and spearheading a Louisiana law to create special "covenant marriage" legal standards that make it harder for a covenant marriage spouse to get divorced. This law has been criticized for creating a legal mechanism—under the guise of protecting a religious sacrament—which empow-

14. Congressman Mike Johnson. "U.S. Rep. Johnson Applauds Passage of Louisiana Prayer Bill," May 21, 2018, https://mikejohnson.house.gov/news/documentsingle.aspx?DocumentID=552.

15. Kyle Mantyla, "The Right's Concept of 'Inclusive,'" *Right Wing Watch*, July 10, 2007, https://www.rightwingwatch.org/post/the-rights-concept-of-inclusive/.

16. Robert Tait, "House Speaker Once Won Taxpayer Funds for Noah's Ark Park Accused of Bias," *The Guardian*, October 26, 2023, https://www.theguardian.com/us-news/2023/oct/26/mike-johnson-noah-arc-amusement-park-tax- money.

17. Liz Skalka and Paul Blumenthal, "New House Speaker Thinks Creationist Museum Is 'Pointing People to the Truth,'" *HuffPost*, October 27, 2023, https://www.huffpost.com/entry/mike-johnson-young-earth- creationist_n_653adc81e4b0d69ae7068a0b.

18. Mike Johnson, "Marriage amendment deserves strong support," *The Shreveport Times*, September 12, 2004, https://www.newspapers.com/article/the-times-kfile/134019997/. See also Johnson, "Sexual orientation move should be opposed," *The Shreveport Times*, July 20, 2005, "https://www.newspapers.com/article/the-times-mike-johnson- 2005/134051395/.

19. Mike Johnson, "Justices take swipe at American values", *The Shreveport Times,* "Alliance Defending Freedom," Southern Poverty Law Center, n.d., https://www.splcenter.org/fighting-hate/extremist-files/group/alliance-defending- freedom.

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23. Matt Lavietes, "New House Speaker's Views on LGBTQ Issues Come under Fresh Scrutiny," *NBC News*, October 26, 2023, https://www.nbcnews.com/nbc-out/out-politics-and-policy/mike-johnson-house-speaker-lgbtq-views- scrutiny-rcna122317.

24. Brooke Migdon, "Johnson's strident LGBTQ views put advocates on alert," *The Hill*, November 3, 2023, https://thehill.com/homenews/lgbtq/4291024-johnsons-strident-lgbtq-views-put-advocates-on-alert/.

25. Johnson, "Marriage amendment deserves strong support."

26. Martin Pengelly, "New House Speaker Mike Johnson Praised '18th-Century Values' in Speech," *The Guardian*, October 27, 2023, https://www.theguardian.com/us-news/2023/oct/27/mike-johnson-value-moral-conservative- republican.

ers violent and abusive spouses to delay and impede their victims from securing a divorce.[27]

c. Attacking Reproductive Freedom

Speaker Johnson has spent much of his career trying to impose his faith-based views by banning abortion and contraception for every woman in America.[28] Undaunted by the fact that most Americans disagree with him, Johnson's efforts have been sweeping and, by any measure, extreme. Indeed, his record on reproductive freedom is among the most radical of any member of Congress.

Banning abortion and reproductive choice was at the heart of his work as Senior Legal Counsel for the Alliance Defending Freedom. In that capacity, he fought to shut down Louisiana abortion clinics,[29] described abortion as "a holocaust,"[30] challenged contraceptive coverage,[31] and called for a return to "18th-century values."[32] In Congress, he has cosponsored several nationwide abortion bans and introduced legislation to impede minors from traveling across state lines to receive abortion care.[33] He has also called for anyone who provides an abortion to be "imprisoned at hard labor."[34]

d. Championing Religious Immigration Tests and Nativism

Speaker Johnson's support for former President Donald Trump's discriminatory "Muslim ban" suggests that he believes our "Christian nation" can impose a religious immigration test to exclude Muslims, and presumably other non-Christian believers, from entering our country. When he appeared at a panel discussion for a White Nationalist hate group that espouses the "great replacement theory," he claimed that immigrants "whose names I cannot pronounce from countries all over the world" are threatening "our identity as a nation-state."[35]

In light of the above, Speaker Johnson should give clear answers to the following questions:

- As Speaker of the House, will he continue to press an extreme agenda of banning and/or criminalizing abortion and contraception across the country?
- Will he continue trying to overturn settled law regarding marriage equality?
- Does he think states have the power to ban interracial marriage?[36]
- Will he continue trying to criminalize consensual same-sex relationships?
- Will he try to enact federal legal protections and privileges for Christians who seek to discriminate on the basis of gender identity, sexual orientation, race, creed, or other protected class?
- Will he attempt to federally weaken or limit no-fault divorce laws, including codifying religious practices such as "covenant marriage"?
- Does he support religion-based immigration tests?
- Does he agree with the "great replacement" theory?

4. Undermining Democracy and the Extreme Christian Nationalist Agenda

Lastly, we are concerned by Speaker Johnson's close personal, professional, and political ties to Christian Nationalists.[37] This includes connections to hate groups that were deeply involved in the January 6th insurrection and espouse violent, theocratic, and anti-democratic views about our country.

For instance, Speaker Johnson has worked closely with the New Apostolic Reformation (NAR), including pastor Jim Garlow, who he called a "profound influence" on his life.[38] NAR promotes the controversial "Seven Mountain Mandate," which calls for Christians to "conquer" and "take dominion" over the "key mountains of society" (such as education, business, media, and government) in order to establish a hegemonic Christian domain.[39] As key evangelical advisors to for-

27. Molly Olmstead, "Want to Understand the New House Speaker? Look to His Marriage.," *Slate Magazine*, October 30, 2023, https://slate.com/news-and-politics/2023/10/mike-johnson-republican-house-speaker-covenant- marriage.html.

28. Tessa Stuart, "House Speaker Johnson's Long Crusade Against Birth Control," *Rolling Stone*, October 31, 2023, https://www.rollingstone.com/politics/politics-features/mike-johnson-crusade-birth-control-1234865718/.

29. POLITICO Pro Staff, "Here's Where Speaker Mike Johnson Stands on the Issues," POLITICO, October 25, 2023, https://www.politico.com/news/2023/10/25/new-house-speaker-mike-johnson-on-the-issues- 00123627#:~:text=In%20that%20role%2C%20he%20worked,six%20weeks%20into%20a%20pregnancy.

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mer President Trump, Garlow and other NAR leaders played a powerful role in promoting 2020 election lies that motivated the January 6th insurrection.[40] In the weeks leading up to the attack, NAR leaders coordinated "Global Prayer for Election Integrity" calls that implored Christians to pray and mobilize for Trump's reinstatement as President.[41]

Speaker Johnson regularly participated in these calls when they became the "World Prayer Network," and he was at the heart of Trump's legal efforts to overturn the 2020 election results.[42] He worked closely with Trump's legal team and House GOP colleagues to develop legal theories to overturn the 2020 election results. The litigation that Mr. Johnson helped initiate promoted debunked conspiracy theories and false claims about Dominion voting machines that were universally rejected by the courts.[43]

Speaker Johnson's close relationship with NAR appears to be ongoing. Earlier this year, he was "at the helm of the planning" for a Christian Nationalist alternative to the National Prayer Breakfast with Garlow.[44] We noticed that Johnson also decided to fly the "Appeal to Heaven" flag outside his office, which NAR popularized as a Christian Nationalist symbol, and which was carried by many January 6th rioters.[45]

Speaker Johnson is also closely aligned with David Barton, a prominent Christian Nationalist who has spent years attacking the separation of church and state, promoting a revisionist history of the United States as a Christian nation, calling for mandated prayer and biblical creationist courses in public schools, and claiming that "the first purpose of public schools is to teach students to love and serve God."[46] Johnson describes Barton as a "profound influence on me, and my work, and my life and everything I do." Barton boasted that he has been advising Speaker Johnson on staffing, and it appears the Speaker is listening.[47] Barton claims that Mr. Johnson's elevation to the Speakership offers him "some tools at our disposal now we haven't had in a long time."[48]

Additionally, some of the other Christian Nationalist groups Speaker Johnson is close to—including his former employer "Alliance Defending Freedom"—have collaborated on the "Project 2025" policy agenda for the next Republican President.[49] This radical authoritarian agenda has been described as a plan to install Trump as "dictator."[50] Among other things, it calls for sweeping new executive powers, embraces a "unitary executive" theory that reduces checks and balances on presidential abuse of authority, purges politically disloyal employees from the federal workforce, and biblically "purifies" the country by opposing marriage equality, criminalizing materials with LGBTQ+ content, and restricting other civil rights and liberties.[51]

As recently as December, Speaker Johnson headlined the annual gala for the National Association of Christian Lawmakers, an openly Christian Nationalist organization that honored Johnson for his "Christian leadership." In Johnson's keynote address, he declared that God speaks to him regularly and had urged him to "step forward" like Moses to lead the nation and "seek Him for the path through the roiling sea."[52] Speaker Johnson also sent a fundraising appeal lamenting that our "depraved culture" has "fallen so far since the founding of our country" and insinuating that schools today are causing more students to identify "as something other than straight." He asked his followers, "Does America need more God?" and concluded himself: "America needs to recognize that we have much to repent for if we want to avoid the judgment we so clearly deserve, but that starts with returning America to God's good graces once again."[53]

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In light of the breathtaking depth and breadth of Speaker Johnson's ties to Christian Nationalists, including organizations labeled as hate groups, and the central role he played in the attempts by these groups and others to overturn the results of the 2020 Presidential election, Speaker Johnson should answer the following questions:

- Did Joe Biden win the 2020 election?
- Is there any part of the Christian Nationalist movement—including hate groups, attempts to overturn the 2020 election, and calls for political violence—that Speaker Johnson is willing to denounce or disavow?
- Does he support NAR's Seven Mountain Mandate?
- Will he attempt to implement the Seven Mountain Mandate by placing like-minded Christians in key positions of power to transform the nation into a hegemonic Christian domain?
- Does he support the Project 2025 agenda developed by his former employer and other Christian Nationalist groups?
- Are there any parts of the Project 2025 plan that he would denounce or disavow, such as the elimination of checks and balances on executive power or the criminalization of materials containing LGBTQ+ content?
- If Mr. Johnson is Speaker of the House in January of 2025, and if Joe Biden wins at least 270 electoral votes, will he in any way oppose, obstruct, or delay the convening of a joint session of Congress to certify the election results?

Conclusion

The CFC respects the central role of religion in Speaker Johnson's life and the role that religion, philosophy, ethics, and morality play in the lives of most other Americans. We are fortunate to be citizens of a country that protects the rights of all people to express themselves freely and live in accordance with their beliefs—under a Constitution that protects every person from having religion imposed on them or institutionalized by the government.

But we must be clear-eyed about Speaker Johnson's public record: he has dedicated his career as a lawyer, advocate, and legislator to undermining these constitutional freedoms, weakening the separation of church and state, and trying to impose his own radical religious views on other citizens. To this day, he remains deeply entwined with Christian Nationalists that seek to transform our secular democracy into an authoritarian theocracy. Now that he is second in line to the Presidency, Speaker Johnson has the power to continue pressing an extreme agenda that threatens both the secular and democratic character of our republic.

While Speaker Johnson's extensive public record speaks for itself, we nevertheless hope that some of his extreme views and goals may have tempered now that he is Speaker of the House. If so, the CFC and undoubtedly millions of Americans would appreciate assurances to that effect. The CFC still invites Speaker Johnson to dialogue in person with us, and we are committed to seeking opportunities to work with him on advancing freedom of thought, conscience, and religion. But if Speaker Johnson remains unwilling to meet with us, we hope at a minimum that he will answer the questions posed in this white paper.

Like most Americans, we do not want to live in a theocracy. No matter the circumstances, the CFC will continue to defend the separation of church and state and to stand up for the rights and liberties of all religious and non-religious Americans. ■

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[INVESTIGATIVE FILES JOE NICKELL

Joe Nickell, PhD, has been several kinds of investigator (private, literary, paranormal, etc.). In addition, he has also been a homicide consultant (to police and individuals). He is still active after half a century (and some fifty books)—now specializing in significant unsolved mysteries of various kinds.

The Horrific 'Black Dahlia' Murder: Killer's Identity Revealed at Last

One of the most famously shocking murder cases of all time came to light on the morning of January 15, 1947, when the naked and mutilated body of twenty-two-year-old Elizabeth "Beth" Short (originally from a Boston, Massachusetts, suburb) was found lying in a vacant lot near 39th Street and Norton Avenue in Los Angeles, California. The woman who discovered the grotesque scene at first thought it was a store mannequin. Given her black hair and attire, Short had been dubbed "the Black Dahlia"—after a popular movie of the time, *The Blue Dahlia*, written by famed crime writer Raymond Chandler, starring Alan Ladd and Veronica Lake.

Elizabeth Short photo from a police bulletin distributed by the Los Angeles Police Department.

The Victim

The murdered, bisected body was first reported to the Los Angeles police that morning, shortly after 6 a.m. Prior to that, subsequent investigation would reveal, Short had been missing for several days. The last person known to have been with her was a red-haired man known as "Red" who drove a light-colored coupe.

Short had been staying at the home of Elvera French, a widow, at Camino Padera (in Pacific Beach) for four weeks. In mid-December, an old boyfriend from home had wired Short $100 (the equivalent of about $1,000 today). She apparently had been seeing "Red" for a little while but had wished to go to San Diego to look at the work situation there. On January 7, she received a telegram—asking her to wait—signed "Red."

Short called the red-headed man Bob, and he had apparently agreed to drive her to San Diego. The next day, wearing a black tailored suit with frilly white blouse and black stockings, she and Bob loaded her two suitcases and hat box into the coupe's trunk. She had a pinkish camel hair coat draped over her arm and a black purse clutched in her hand. The couple soon drove off.

When an enterprising *Examiner* reporter tracked down French's modest housing project, he learned of an incident there—seeming somewhat alarming in retrospect. One night, two men and a woman had been knocking at the door, but Short refused to answer. Instead, she only peeked out the curtain

and appeared relieved when the three finally left. If one of them had been Red, their situation had since improved, because they were laughing and joking on leaving for San Diego.

From the French home, the reporter, Tommy Devlin, canvassed motels along the way to San Diego and scored a hit. In the registration book were signed Elizabeth Short of Chicago, and —identifying Bob—Robert Manley of Huntington Beach (Pacios 2000, 87–89).

Abduction

Curiously, although Short's avowed purpose for going to San Diego was to check out employment opportunities there, she and Red had no sooner arrived than they purportedly headed back—on January 9. Short supposedly said she was to meet her sister at the L.A. Biltmore. Short asked to check her bags and hatbox at the Greyhound bus depot nearby. Then, Red would later allege, he dropped her off at the hotel and drove away, even though the sister had never appeared and was never even registered at the hotel (Gilmore [1994] 2021, 115–116). Had Red told the truth?

It was as if Short walked into another dimension; she would not be seen alive again. From January 9 to January 15—the day her remains turned up in the vacant lot—she was missing. Homicide detectives would refer to this period as the "lost week" (Gilmore [1994] 2021, 139, 144). Although several purported "sightings" of Short would be claimed during the missing week, none could be confirmed (Eatwell 2018, 73–74).

The detectives looked further into Short's acquaintances and her frequent encounters with men. The suspicion that she was a prostitute was quickly laid to rest. Truth was, she was hoping to become a film star and enjoyed attention—letting men buy her a drink or something to eat but going no further. She was simply quite poor. Detective Harry Hansen wisely concluded: "The killing seems to be based on an unbelievable anger. I suppose sex was the motive, or at least the fact that the killer was *denied* sex" (Pacios 2000, 77, 96–97).

Short's grave in Oakland, California. Credit: DarkCryst at English Wikipedia

The autopsy surgeon, Frederick Newbarr, mentioned another possibility—so controversial it was omitted from the official autopsy report: Elizabeth Short, Newbarr told detectives confidentially, did not have fully developed genitals. This could possibly have been the "shocking secret" a friend back home had referred to, that Short was unable to have typical sex. Details are unavailable, but the problem may have been the lack of "a completed vaginal canal." It also appeared that the killer had excised parts of her female organs. Tests for sperm in body cavities or stomach were negative, and the exterior of the body had been washed (Pacios 2000, 97–99; Gilmore [1994] 2021, 124–127). These factors may help explain aspects of the victim's behavior, as well as clarify the extreme rage of the killer.

Police officer John St. John said about the killer:

> All we can know for certain is that the perpetrator had a car or access to a car, and that he most likely was between twenty and thirty-five years of age because those are the ones more apt to use knives. He was very powerful, judging by the force of the blows. But he may not have set out to murder anyone. He may have been operating on a short fuse and something could have set him off, driven him over the edge.

He added pointedly, "You find where she was on the missing days, from January 9, when she was last seen, to January 15, when her body was found, and you have her killer" (qtd. in Pacios 2000, 134). The best evidence is that she was with Red Manley, the last person *known* to have been with her.

The place where Short was kept, during what must be understood as her secret confinement and murder, has been referred to as the "torture chamber" (Gilmore [1994] 2021, 139). It could have been some abandoned dwelling or other remote site, surely equipped with a bathtub (in which the body was bisected, drained of blood, and washed). Whether ante- or postmortem, the body bore many cuttings: lacerations on the face, including a slash on either side of the mouth, extending it into a grotesque smile; cuts around both nipples; and many others, including a gouged-out area of the left thigh. She died from brain concussion due to blows to the head (Gilmore [1994] 2021, 2–5, 119–124).

At the crime scene, the two halves of the body were deliberately *posed*, with the arms bent at the elbows and extended beside the head, as in a "surrender" gesture, and the legs extended wide apart in a presumably sexual man-

ner. The crudely cut, clownlike smile was a very important part of the posing effect—clearly meant to draw attention. The intestines had been placed, out of sight, beneath the buttocks. There were tell-tale rope abrasions on the wrists, ankles, and neck (Gilmore [1994] 2021, 2–5; "Black Dahlia" 2023, 3).

Arrest!

Robert "Red" Manley, a traveling salesman, had spotted Short back in December, standing at a street corner. Impulsively, he circled the block and, leaning over to the passenger window, asked, "Can I give you a lift?" She replied, "I'm on my way home," and—without asking how far that was—he offered to take her there.

Manley had a wife and baby, but he was someone who thought first about himself and could lie with impunity. He had decided he needed to "readjust": His wife's pregnancy had been a turnoff for him, and, as when he had been in the army, he had trouble with restrictions, with discipline. He had gotten a "Section Eight" there (a psychiatric discharge), and here he was again, telling himself, "Look out, Red, you're going off the deep end" (Gilmore [1994] 2021, 103–107)! As one struggling against impotency, he thought Short was just what he needed. Although his wife was attractive, Short was a knockout. Unfortunately, she had her own problems. Together, the pair might prove explosive.

Soon after the murder, on Wednesday, January 15, the LAPD had identified "Red" as Robert M. Manley and knew he was gone on a business trip with his boss, Harry Palmer. The pair were due to return on Sunday. When their car's headlights came to rest on Palmer's garage door, he and Manley were blinded by police spotlights and shouted at to "Freeze!" Manley said quickly, "Listen, I knew Beth Short. I turned sick inside when I read the papers in San Francisco last Friday." Detective Jasper Wass was disgusted at what he regarded as an act; he was already convinced Manley was the killer (Pacios 2000, 89–90).

As it happened, everything Manley did in his interactions with police, reporters, and others was theatrical—comparable, in fact, to the killer's staging of the crime scene on Norton Avenue. As would eventually be learned from the FBI's search through Army records, Manley had indeed been discharged for being "mentally unfit for service" (Pacios 2000, 91).

After Red was booked, that same night he was questioned at length by officers attempting to get a confession. Ray Pinker administered a lie detector (polygraph) test, but the results, he determined, "were inconclusive." Manley in fact kept falling asleep or feigned doing so—certainly one way to gum up the works. Manley was returned to his holding cell and used the sleep trick to keep the press at bay. "If a reporter approached his cell, Manley closed his eyes, pretending to be asleep." This bit of acting proved most effective (Pacios 2000, 91).

After Manley was presumably rested, another polygraph test was given. Unfortunately, the administrators of that test had meanwhile discussed the case, and they had become "inclined to believe Manley's story." At this time, *Herald-Express* reporter Agnes "Aggie" Underwood interjected her positive opinion of his truth-telling. Her photographer caught them on film: "Manley looked as if he was sitting in the electric chair," continuing to act as if he were enduring an ordeal (Pacios 2000, 91–93; see photo in Gilmore [1994] 2021, 142). Not surprisingly, Manley was reported to be truthful.

Lie detectors, it must be noted, do not detect lies. At best, they detect emotional responses that could suggest lies. However, obviously a pathological liar, one who lies with impunity, might well pass such a test. Also, as one polygraph expert has noted, the device is "useless with schizophrenics and someone who has been grilled." As he explained, "If you hammer away at a suspect saying, 'You did it … You did it …,' when he takes the test he may be responding not to what he *actually* did, but to what he was *told* he did." Such problems are why the polygraph needs to be limited to investigative rather than trial use (Nickell 2012, 54).

Red Manley's story—that he had dropped Short off at the Biltmore (at the beginning of the "lost week")—leads us to consider the principle of Occam's razor, that the hypothesis with the fewest assumptions is to be preferred. It would obviously have been simpler for Red to have kept Short with him than for an unknown killer (one of thousands of people) to have chanced by and kidnapped her so soon after he had left her. Manley had little to say at the inquest held on the body of Elizabeth Short on January 22. He told the same brief story of dropping her off at the Biltmore on January 9 at 6:30 p.m. Asked if he had given "every assistance you can," he answered, "Yes, sir" (transcript in Pacios 2000, 235–245).

To the police, Red Manley maintained that on the night of the murder he and his wife were playing cards with friends, Mr. and Mrs. Don Holmes, who substantiated that (Pacios 2000, 93). However, it is far from certain that the murder occurred on the night of January 14 to 15 and could easily have been the previous evening especially because the washing of the body and cold nights could have helped preserve the severed body (presumably locked in his coupe). Or he may have quickly staged the crime scene after the card game ended. (A cement sack at the crime scene suggests the inside of the killer's car was protected by them. Also, that Manley's car had no bloodstains is consistent with the corpse being drained of blood and washed and the car subsequently cleaned [Eatwell 2018, 32]).

The Killer Speaks!

Next, we hear from the self-identified killer who sent a small package addressed "To the Los Angeles Examiner and Other Papers." It was, in the spirit of the Black Dahlia's posed body, decorated with letters and words cut from newspapers and reading, "Here is Dahlia's Belongings," and "Letter to Follow." The package contained the very real possessions of Beth Short: her birth certificate, social security card, claim checks for her suitcases, and other items, including an address book with Mark Hansen's name in gold on the cover; it

Robert "Red" Manley. Credit: Lance - findagrave.com

had been unused, but Short had made it her own, filled with names of friends and contacts.

The items were unquestionably Short's and had been in her purse—thus indicating the sender was her actual killer and not some pretender. The items had all been wiped with gasoline, which acts as a solvent to dissolve the perspiration and body oils that form latent fingerprints. As one detective said: "[This] was the same manner in which he cleaned everything so carefully with gasoline. It was the same kind of psychopathic cleanliness he'd used in the handling of the corpse" (Gilmore [1994] 2021, 148–151).

Not only was this evidence that it came from the actual murderer, but it further incriminates Red Manley. Manley had the closest and most recently known contact with Short and her purse, which along with her shoes would soon be found atop an open garbage can some twenty blocks north of the crime scene. They were shown to Red Manley, who identified them (Hodel 2015, 144–145). (Incidentally, Short's body had been scrubbed clean with a thick-bristled brush of coconut fiber [Hodel 2015, 159]. This was just the thing a traveling hardware salesman like Red Manley might have had among his samples.)

Although police never totally gave up on Manley as a suspect, lacking any physical evidence and given the lie detector tests, they turned their attention elsewhere. After the killer taunted the newspapers with further paste-up messages—one of them insisting, "Dahlia killing was justified" (Newton 2009, 47)—Manley was largely left alone. However, he never got over the case. Indeed, he would go on to have several breakdowns, invariably near the anniversary of the horrific murder and the subsequent suspicions of his guilt. In March 1954, his wife had him committed to a state hospital for the fourth time. As she reported, he "hears voices and scribbles nonsense. He cries and feels guilty." What irony!

During one of these confinements, the police—still suspicious of him—asked him to take so-called truth serum. That is another supposed lie-detection technique, but the drug's results are at least as doubtful as those of the polygraph. Not unexpectedly, once more Manley was able to make use of his acting ability and convince the police, as an official source told reporters at the time: Manley "knows nothing of the crime" (Pacios 2000, 93).

Years later, however, the real Red Manley came through. He was then living alone in a trailer. He was found there by a man hired to track down subjects for a 1975 TV movie on the Black Dahlia case. All seemed to go well as the men talked and sipped beer, but then something set Manley off. Recalled the interviewer: "*Manley suddenly grabbed an ax and chased me out of the trailer, saying he was going to kill me*. He never did sign the release form. A few days later, Manley checked himself back into a psychiatric hospital" (Pacios 2000, 94; emphasis added). Revealing behavior indeed! In 1986, he died in a nursing home (Eatwell 2018, 33).

Again and again, Manley has been shown to have been the likely killer, but unfortunately investigators moved to other possible subjects when he was supposedly cleared—a travesty caused by pseudoscience. Since then, there have been countless possibilities—real or imagined—and over 500 people have confessed they were the guilty one ("Black Dahlia" 2023)! Those suggested even include famous American actor and occasional stage magician Orson Welles. Interestingly, he did perform the stage illusion of cutting a woman in half (Pacios 2000, 137–147, 251–253)! (For other suspects see, e.g., Hodel 2015, 61–67, 386–390; Hodel with Pezzullo 2009, 1–2; Newton 2009, 47–48; Gilmore [1994] 2021, 185–193; Miller in Wilkes 1999, 177.)

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And so the outrageousness continues. I suggest that the Los Angeles police should return to their "suspect No. 1"—Robert "Red" Manley—and reprise then close the case. They can simply say they were right from the start. Of course, in 1947 the legal standard was high—beyond a reasonable doubt—because the accused risked life or liberty. Now, however, because those risks are not involved, the lesser standard—a preponderance of the evidence—applies. I submit that the case against Manley is so proved, suitable for the judgment of history. To continue to call the case unsolved is perverse. ■

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[NOTES ON A STRANGE WORLD MASSIMO POLIDORO

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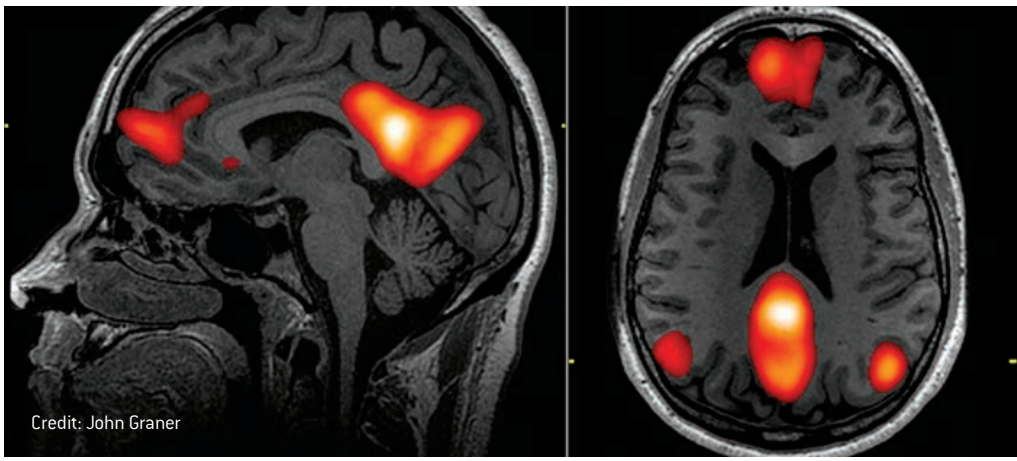
Believe It or Die!

Certain beliefs that seem absurd and nonsensical to many of us, especially because they seem to go against all evidence, start to make sense when we realize that for each member of the human species, it is often more important to be seen as a good member of its group than it is to recognize the truth of the facts. If it is necessary to believe in something that is wrong or openly false to be part of a group—and to be recognized by peers as a legitimate member of that group—then that is what many will do. In fact, not conforming to the rules, norms, and beliefs of the group can have a consequence that is feared more than anything else: social death.

Normally when we feel threatened by something, the hypothalamus—a small portion of the brain located at the base and in between the two hemispheres—sounds the alarm. Nervous and hormonal signals produce a reaction in the body known as "fight-or-flight," in which increases occur in heart rate, blood pressure, and energy supply to the muscles, heart, and brain; everything else that would not be needed in a fight-or-flight situation, such as digestion or immune defenses, is suppressed.

When we are confronted with facts and demonstrations that disprove what we believe, our bodies react exactly as if suddenly confronted by a lion. Jonas Kaplan, Sarah Gimbel, and Sam Harris (2016) were able to demonstrate this with an ingenious experiment. They selected a group of people with strong opinions, political or otherwise, and had each subject enter a functional MRI scanner. At this point, each person was randomly read either some neutral sentences or phrases that contradicted what they strongly believed. If, for example, a person believed in the right to own guns, he or she would be read the sentence: "The laws governing gun ownership in the United States should be more restrictive." Or, if the person believed that guns were dangerous, the sentence read was: "Ten times more people are murdered with kitchen knives each year than are killed by assault weapons." The goal was not to change the subjects' minds but instead observe how their brains reacted to statements that contradicted their stated values.



Credit: John Graner

The result was that people had the same kind of biological reactions they would have when faced with a real physical threat. In particular, blood flowed copiously to regions of the brain identified as the *default mode network*, an area that is activated, for example, when people are thinking about themselves, including in relation to others, remembering the past, or making plans for the future (Buckner et al. 2008). When meditation or hallucinogens induce a feeling of detachment from the self or the impression of being part of the world around us, this occurs because the default mode network is dampened. If, on the other hand, blood flows copiously to this area, the result is the opposite: To hell with what's around us, let's stick to our values!

"Remember that the brain's first and primary job is to protect ourselves," writes Jonas Kaplan. "That extends beyond our physical self, to our psychological self. Once these things [beliefs, attitudes, and values] become part of our psychological self, they are then afforded all the same protections that the brain gives to the body" (McRaney 2022). Beliefs of all kinds, religious, political—but also beliefs related to conspiracy theories—therefore help define who we are, define our identity, and are very important within the social group to which we belong. "To consider an alternative view," Kaplan further says, "you would have to consider an alternative version of yourself" (University of Southern California 2016), which is not at all easy and risks social death. ■

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[THE PHILOSOPHER'S CORNER

MASSIMO PIGLIUCCI

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Pseudoscience and Local Scientific Epistemology

Human beings are funny creatures. On the one hand, we have figured out how to travel to the moon and send spacecrafts outside the solar system. On the other hand, many of us still believe in astrology. What's going on here?

This is how a recent paper on the infamous "demarcation problem," how to separate science from pseudoscience, begins (Blancke and Boudry 2022). In the paper, coauthored by two colleagues and friends of mine, Stefaan Blancke (Tilburg University, Netherlands) and Maarten Boudry (Ghent University, Belgium) articulate an intriguing idea: pseudoscience can best be understood as a negative outcome of scientific dialogue, what they call a pragmatic-naturalistic approach to demarcation.

The underlying notion is simple: to understand pseudoscience, we need to understand its positive counterpart: science. This may sound like a no-brainer, but science itself is a complex activity that has famously eluded any simple attempt to define it or circumscribe it (Pigliucci 2018).

For instance, physics and chemistry are ahistorical sciences, while evolutionary biology, astronomy, and geology are historical sciences. That makes a huge difference in the way hypotheses are tested within each discipline (Cleland 2002). Physicists and chemists normally rely on experiments, that is, on highly refined manipulations of a controlled environment. By contrast, astronomers and geologists rely mostly on systematic observations and so-called natural experiments, i.e., contrasting situations that take advantage of the variability of natural phenomena. Evolutionary biology is somewhere in the middle, making use both of experiments and systematic observations. And even when evolutionary biologists are able to carry out controlled experiments, the results depend on the past history of the organisms used, unlike the case of, say, particle physics, where the "individual" history of a photon or electron doesn't matter.

Despite these and other complications, we have made quite a bit of progress in understanding the nature of science. What about the nature of pseudoscience? Well, *pseudo* comes from Medieval Latin and ultimately from Attic Greek, literally meaning *fake* or *false*. So, it stands to reason that understanding the real thing (science) leads by implication to understanding its fake counterpart (pseudoscience).

Blancke and Boudry tackle the problem by first attempting to define science as a particular kind of human activity. Building on an earlier suggestion by Susan Haack (2003), they treat science as "common sense, only more so," meaning that what scientists do, epistemically speaking, is different quantitatively (because it's more rigorous and refined) but not in kind from everyday thinking and problem solving.

Roughly speaking, science as a social epistemic activity works like this: On the production side, individual scientists are just as lazy (meaning, they tend to cut corners and minimize effort) and biased (politically, religiously, or otherwise) as any other human being. Typically, they put forth their particular

ideas, hypotheses, or theories and then look for empirical data that *confirms* them. Scientists, like other human beings, don't go around actively searching for evidence that may *falsify* their views.

This, however, is not a problem because on the receiving side, we have other scientists who have incentives (career advancement, grants, ego boosting) to poke as many holes as possible into other people's ideas. The system of peer review, both before and after publication, can be understood as a sustained crossfire of criticisms of what has been produced so far. As Blancke and Boudry put it: "The rationality of science resides in the social exchange of reasons, not in the individual production and critical evaluation of reasons. … Science is a process of pitting reasons against reasons in a continuous social exchange."

Having seen the sausage being made, so to speak, I can attest that it ain't pretty. But it is precisely the fact that scientists produce and defend ideas that are then criticized and either rejected or provisionally accepted by other scientists that makes the whole system work so beautifully. Most of the time—or at least enough of the time—science truly is the only reliable producer of knowledge about the natural world and how it works.

Helen Longino (2002) has referred to this dynamic exchange of ideas, evidence, and reasons within a particular scientific community as a *local epistemology*. For instance, fundamental physicists have their own local epistemology, which includes criteria according to what that community establishes is and is not scientifically acceptable in their specific domain. The local epistemology of, say, evolutionary biologists is very different in terms of accepted standards of evidence, methods, reasons, and so forth from that of fundamental physicists. The local epistemology of social scientists (cognitive psychologists, for example) is even further remote from that of physicists, and so forth.

Of course, any given scientific sub-community will not be infallible in its determinations. The history of science tells us of various episodes in which scientists settled on a consensus that was later overturned. At the end of the nineteenth century, for instance, many physicists were convinced that the field was coming to an end and soon there wouldn't be much left to do other than mopping up details. And then general relativity and quantum mechanics happened. Nevertheless, our best bet at any given moment in time is to go with what a particular epistemic community accepts as valid (or rejects as invalid), because the process of back-and-forth criticism described above is the best we have been able to come up with so far.

What about pseudoscience, then? Blancke and Boudry write: "Pseudoscience can be regarded as comprising doctrines and practices that are completely unsupported by good reasons according to a majority of scientists within a particular field." That is, homeopathy is considered a pseudoscience because the proper epistemic community, that of medical researchers, has looked into it and found it wanting according to the specific criteria of the local epistemology.

The same goes for creationism and so-called creation science. "Flood geology" doesn't cut it according to the criteria that define the epistemic community of geologists. Creationist criticism of the fossil record doesn't cut it according to the criteria that define the epistemic community of paleontologists. And so on.

Note that this isn't as simplistic as saying that "whatever scientists say goes." Because each scientific sub-community is responsible for explicitly articulating the reasons a given idea is accepted or rejected by that community. And such reasons are defeasible, being in principle open to revision, if new and contrasting arguments or evidence come about. Another way to put this is that an idea qualifies as pseudoscientific if it is advanced despite having abundantly and repeatedly failed to meet the criteria of the relevant epistemic community.

But wait a minute. Don't supporters of allegedly pseudoscientific notions also form epistemic communities? Don't they even sometimes have conferences and dedicated journals? They do, but the internal dynamic of such communities is dramatically different from that of their scientific counterparts. Typically, supporters of pseudoscience are not just affected by (inevitable) individual biases, they actively engage in collective bias. As a group, they do *not* strive to critically analyze each other's ideas. On the contrary, they strive for *confirmation* wherever they can find it.

A bit more formally, we can say that a scientific sub-community is ideally characterized by the following norms: universalism (the notion that gender, class, ethnicity, and so forth are irrelevant in the context of scientific discussions), communality (the results of scientific inquiry belong to everyone), *organized* skepticism (no idea is exempt from criticism), and disinterestedness (community-level mechanisms are structured to counter personal bias). By contrast, pseudoscientific communities tend to lack one or more, and sometimes all, of those norms, especially the last two.

What I have sketched here is also, incidentally, a very good example of the division of labor among scientists, philosophers of science, historians of science, and sociologists of science. The latter three types of scholars are in the business of studying science from the outside and observing and describing its inner mechanisms, paying attention to both instances in which it works and those in which it doesn't. But it is up to scientists themselves, within each sub-community, on the basis of specific local epistemologies, to advise the rest of us about whether an idea or hypothesis is scientific or pseudoscientific. ■

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[BEHAVIOR & BELIEF STUART VYSE

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New Research Suggests Almost Everybody Is Superstitious

Polls and surveys have found that about a quarter of Americans are superstitious (e.g., Moore 2000; Orth 2022). At the high end of the scale, there have occasionally been surveys showing somewhere around half of respondents were at least a little superstitious (*60 Minutes/Vanity Fair: Superstition* 2015). According to new research—some published and some yet to be published—those numbers may be a wild underestimate.

The wording of a survey question can have a powerful effect on the results, and the methods in these polls varied substantially. For example, a 1996 Gallup telephone poll asked for an overall assessment using this wording: "Some people are superstitious and try to behave in such a way as to avoid bad luck or 'jinxing' themselves, and others are not. How superstitious are you?" with the choices "very," "somewhat," "not very," and "not at all" (Moore 2000). In contrast, a 2022 YouGov online poll simply asked "Is there anything you are superstitious about?" With choices "yes" (26 percent), "no" (56 percent), and "not sure" (18 percent). But as it turns out, the concept of superstition is a bit more complicated than we thought, and when those complications are considered, the picture changes dramatically.

A New Measure of Superstition

Avner Caspi and colleagues at the Open University of Israel recently published a study in the *Journal of Individual Differences* that introduced a new and more complete way of measuring superstition. One of the results of their new method was an enormous boost in the estimated number of people who are superstitious (Caspi et al. 2024). For years, superstition researchers have understood that some people perform superstitions despite saying they don't believe in them. The classic example is a journalist who copied and distributed a superstitious chain letter, claiming, "You understand

that I am not doing this because I'm superstitious, I just want to avoid bad luck" (Risen 2016, 192). This is a case of not believing but performing the superstition anyway, which has sometimes been called "half-belief" (Campbell 1996).

One of Caspi and colleagues' contributions was recognizing that the opposite is also true: some people believe but do not perform superstitions, perhaps out of fear of how they will appear to others. They called these people "passive believers." To get at all these variations of belief, they first created a list of twenty-four superstitions. Some of the superstitions were more positive, hopeful beliefs, such as "If you make a wish when you see a falling star, it will come true," and others were fear-based, such as "If a mirror breaks in your house, it will bring bad luck." Next, they asked their participants three things about each superstition. First, whether they were familiar with the superstition. Superstitions that were unfamiliar to the participants were eliminated from the analysis. Next, they asked participants to rate their belief in the superstition on a scale from "not at all" to "absolutely." Then, the researchers asked the participants how often they practiced the superstition on a scale from "never" to "always." Finally, the researchers calculated an average belief score across all the superstitions that were familiar to each person, as well as an average practice score. By asking about belief and behavior separately, Caspi and colleagues were able to identify people whose belief in superstition did not align with their behavior. Figure 1 shows a hypothetical set of results similar to Caspi's findings.

The blue dots in Figure 1 represent people the researchers called "calibrated" because their level of belief in superstition matched their frequency of performance. People with high levels of belief performed superstitions more often, and people with lower belief performed them less often. There is no paradox here because this is how we expect people to act. In contrast, the red and green dots represent people whose beliefs and practices don't agree with each other. The green dots are half-believers: people who practice superstitions despite having low or no belief in them. The red dots represent passive believers: people who have some level of belief in superstition but rarely or never practice it. Most other surveys have asked more global questions that could not reveal discrepancies such as those symbolized in Figure 1, and Caspi and colleagues found plenty of people in the red and green categories because only approximately 15 percent of their participants fell along the calibrated blue diagonal.

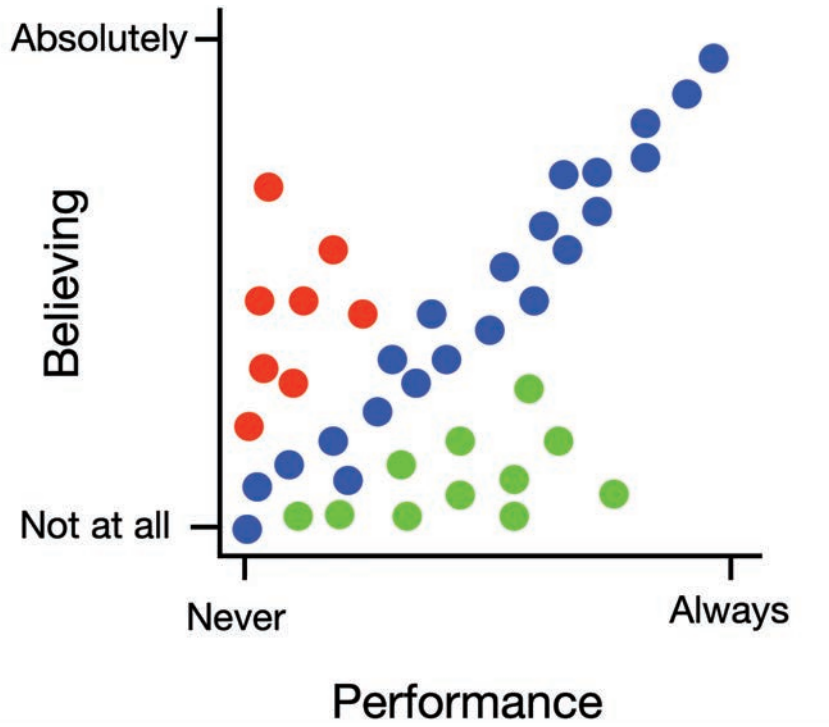

Figure 1. A graph of hypothetical results using the methods of Caspi et al. (2024) as drawn by the author. The blue dots represent people whose superstitious beliefs and behavior are calibrated—their behavior is consistent with their beliefs. The red and green dots are people whose belief and behavior are misaligned. The red dots are passive believers who believe in superstitions but rarely or never perform them. The green dots represent half-believers, people who don't believe in superstitions but perform them anyway. The only individual on the graph who would qualify as nonsuperstitious is shown by the blue dot in the lower left-hand corner.

According to the study, anyone who reports either belief in or performance of superstition is superstitious—which makes sense. But their shocking conclusion was that a mere 3 percent of their sample fell into the *nonsuperstitious category*—zero belief in superstition and zero performance of superstition—and as a result, fully 97 percent of their sample was superstitious. Given that the previous estimate was 50 percent at the extreme, this is an astounding result.

So, why was their figure so much higher? One obvious hypothesis is that the sample was unusually superstitious. As it turns out, the authors used two samples of Israeli adults (total number = 1,014), but they argued that the higher estimate reflected their new method of measuring superstition rather than the nature of Israeli culture. Nonetheless, without sampling other cultures, it is impossible to eliminate the possibility that Israelis are just more superstitious than other cultures. I brought this question up in an email exchange with the authors, and I was told they had done subsequent research with other samples, including in the United States, and found similar results—higher than 90 percent levels of superstition. They are currently working toward getting those results published.[1]

This is a mind-blowing outcome. If these results hold up, it means that when both half-belief and passive belief are considered almost everyone is superstitious. Even without the new, as-yet unpublished data, the magnitude of the difference from other polls—a swing of between 40 to 65 percent—suggests that something other than just cultural differences is at play. The new measure is also validated by some of their other findings. In addition to superstition,

Caspi and colleagues measured several demographic variables and personality traits, and with a few exceptions, their findings were consistent with previous research. For example, superstition was more common in younger people than in older and in women than in men. Also, as in other investigations, higher anxiety was associated with greater levels of superstition, particularly for the fear-based negative superstitions, and people who were intolerant of ambiguity were also more superstitious.

A Note of Skepticism

Before we fully endorse the idea that almost everyone is superstitious, there is one feature of the questionnaire that might have inflated their results. Most of the twenty-four items were clearly superstitions: a horseshoe on the wall brings good luck and breaking a mirror brings bad luck. But, in my opinion, two of the items might be picking up on something other than superstition. Knocking on wood is a classic superstition, but most people I have spoken to never do it while alone. In my experience, knocking on wood happens when two people are in conversation and one wants to express a shared hope. To me, this is more of a culturally supported method of communication and bonding. It may have origins in ancient magical beliefs about tree spirits (Vyse 2019), but today, at least here in the United States, it functions less as a superstition than a social gesture. Similarly, Caspi and colleagues included crossing fingers as one of their superstitions. In my experience, this is another social signal that few people do when they are alone. I have sent or received many texts and emails that used the phrase "fingers crossed," but I would not consider the people on either end of the communication superstitious.

In my view, if people who reported performing the superstitions knocking on wood or crossing fingers accounted for a substantial percentage of the participants Caspi and colleagues classified as superstitious, then the 97 percent superstitious rate they found may be too high. The authors posted their data file online, and to do a quick check, I downloaded the file. Large percentages of people who were familiar with these two superstitions reported performing them at least occasionally—but, far more surprisingly—large percentages of the sample reported believing in these superstitions. Sixty-four percent of respondents said they had some level of belief that knocking on wood would keep away bad luck, and 55 percent of participants had some belief that crossing fingers was good luck. Believing that these actions affect luck is completely superstitious, and these rates of belief, though lower than 97 percent, are still substantially higher than other survey results—which brings us back to the question of whether Caspi and colleagues' Israeli sample is substantially more superstitious than other cultures.

Conclusion

If these findings—or anything close to them—hold up in future studies, they suggest that previous methods of asking about superstition were either too general (e.g., "How superstitious are you?") or, when more specific, captured belief or behavior but not both. In addition, by measuring superstition in this way, the researchers provided a very strict criterion for being nonsuperstitious. Participants could only qualify as free of superstition if they were at zero on both the belief and performance scales for every superstition. This result would place them at the blue dot in the lower left corner of Figure 1. Anyone who veered away from that origin point in any direction was counted as superstitious. This approach makes sense to me—as long as the questions are actually measuring superstition—but it also makes it much more difficult to get away with appearing rational if you have even a hint of irrationality in your repertoire.

Finally, Caspi and colleagues have hit upon a simple yet clever way to identify and study people whose beliefs and behavior are misaligned: the red and green dot people in Figure 1, which together made up most participants. I suspect this methodology will be used in the future, and I am particularly interested in these inconsistent people. Why do some people believe in superstitions but not perform them, or, conversely, why do some people engage in superstition when they don't believe? Psychologist Jane Risen (2016) has suggested that this last group (people such as the chain letter copying journalist) are experiencing a conflict between their intuitive reasoning system—system 1, in the language of Amos Tversky and Daniel Kahneman (Kahneman 2011)—and their more rational reasoning system (system 2). They resolve the conflict by giving in to the pull of the intuitive side. Reason tells them it's silly, but their gut tells them to perform the superstition anyway. In the case of the passive believers who believe in but do not perform their superstitions, there are some reasonable hypotheses that might explain their inconsistent behavior, but we will have to wait for future research to gain a better understanding of these quirks of human nature.

In science, one measure of a good experiment is that, in addition to answering a question, it points the way forward and suggests other fruitful questions. This research is still new, but it looks as though Caspi and colleagues have done just that. I can't wait to see what happens next. ■

Note

1. The authors gave permission to reveal this information from our email exchange.

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[THE PRACTICAL SKEPTIC MICK WEST

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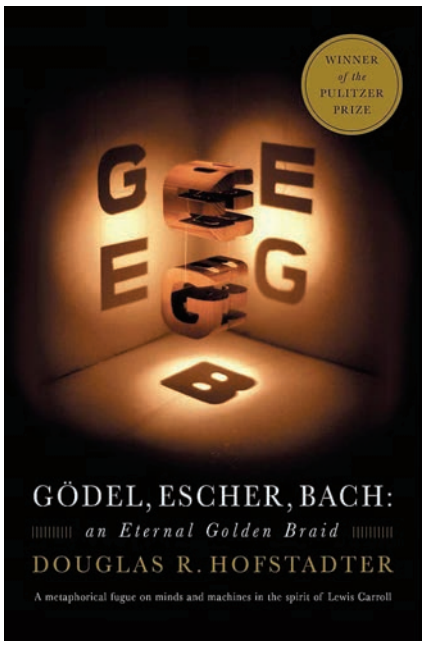
Practical AI for Skeptics


WINNER of the PULITZER PRIZE
GÖDEL, ESCHER, BACH:
an Eternal Golden Braid
DOUGLAS R. HOFSTADTER
A metaphorical fugue on minds and machines in the spirit of Lewis Carroll

The Cray-1 supercomputer. Image Credit: Irid Escent - Wikipedia

I have long been fascinated by the potential for artificial intelligence (AI). Back in the 1980s and 1990s, the topic was largely theoretical and philosophical. Could AI achieve "consciousness?" Would it ever be able to replicate the human experience fully? What will we use it for? Those questions, academic at the time, are now deeply relevant in what seems to be the start of a new age defined by the rapid growth in AI's capabilities and usages.

One of the first books I read that discussed AI was *Gödel, Escher, Bach: An Eternal Golden Braid* by Douglas Hofstadter, published in 1979. It was an entertaining romp through some relatively new ideas about complexity, patterns, and uncertainty. I found it fascinating but ultimately limited by the technology of the day.

To give some perspective on how far we have come, the most powerful computer in the world in 1979 was the Cray-1, a six-foot-tall supercomputer weighing around five tons. It had an impressive performance of 160 megaflops (millions of math operations per second).

It's challenging to comprehend just how much things have improved since then. Your phone is likely considerably more powerful than a Cray-1. The iPhone 14 clocks in at two *teraflops*. That's two million megaflops, or about 12,500 times more powerful than the most powerful computer in the world in 1979. And that's just your phone. The modern descendent of the Cray-1 is the HPE Cray EX, which is *six billion* times as powerful as its ancestor.

So, we do not lack computing power. In many ways, what has been missing is the right combination of

software and data that would allow us to utilize that massive amount of power to replicate intelligence. This started to happen around 2017 with the introduction of a technique called the transformer model. That led to the AI models you should be familiar with now, such as GPT by OpenAI and Gemini by Google.

I say you "should be familiar" with those models because if you are not using AI, or at least following its progress, you are missing out. Some people might bristle at this assertion, but even if you dismiss the claims of an imminent AI revolution, it is inarguable that AI represents—at the very least—a robust set of tools for skeptical research, analysis, and communication. Technology does not get six billion times more powerful with no effect.

Accessing AI

The most well-known AI tool currently is ChatGPT, a chat-based interface to OpenAI's GPT technology. GPT stands for "generative predictive text," which, at the most superficial level, means that it's taking some text (e.g., a question or part of an answer) and using its massive and complex database to figure out what comes next.

This description alone causes some people to dismiss it as a novelty. If it's just predicting text, then how can it create anything of value? I think this misses the point. Philosophical arguments aside, it *seems* to be creating things of value. When I use it, it gives me useful results. Sure, it's "just" predicting what a human might say, but if it gets that prediction right, do we care how it got there?

To get started with AI, you will be well served using ChatGPT or Google's competitor, Gemini. All these products are very much in flux. ChatGPT can be accessed at OpenAI's site, but only the older version 3.5 model is currently free. You can pay for the 4.0 version or access a version of that for free via Microsoft Copilot (formerly known as "Bing Chat").

Google's Gemini is free to use, but there's also an advanced "Ultra" version for a subscription, with a free trial. I encourage everyone to try the most advanced version they can access.

But what can you do with it?

Images and Text

Perhaps the most infamous usage of AI is the generation of content. We've all seen the amazing images that can be generated in seconds from a single prompt. Our first responsibility as a skeptic here is to be aware of how powerful these image-generation systems are and how powerful they will become. We're in a *very temporary* stage in AI image generation, where we can generally detect if an image has been AI-generated.

AI images and video have already been used as part of disinformation campaigns. It's going to get much worse.

But AI's bread and butter is text generation. Many people use AI as a tool when writing. I use a plugin called "Grammarly," which works very well in adding commas and occasionally suggesting ways of rephrasing a sentence.

But modern AI has been able to do much more than this for a few years. It's quite capable of writing entire articles. I encourage you to try this yourself to get a sense of what it is capable of.

What it currently spits out is often a curious mixture of detailed information and bland platitudes. But as with image generation, this is a temporary state of affairs. The quality of the text produced is increasing rapidly, almost daily. Many people saw some of the early efforts, or even the current output, and thought, "Is that it?" It's not; it's a taste of things to come.

Practical Skepticism and AI

I'm a practical skeptic in that I investigate cases and engage with various claims and the people making (or believing in) those claims. There are two aspects of this where AI can be a great help.

The first is in understanding what people are saying. Pseudoscientific claims often use unusual terminology. Claims about specific events sometimes use domain-specific language—particularly with military-related events. These can be difficult to understand, making a skeptical response difficult. Sometimes, odd claims can escape real scrutiny because they are too complicated for most people to get to grips with.

The traditional way of addressing this has been to use a search engine such as Google. But with obscure or niche language, it can be tough to find a relevant page on the internet that will help you. You might be able to look up a word or phrase, but that's often insufficient to understand something in context.

What I find myself increasingly doing is asking ChatGPT to explain things to me. For example, someone posted this in a discussion about UFOs: "I don't think in A/A mode there is any other system that can provide a range other than the RADAR. He acknowledges the LTD/R doesn't fire."

What's A/A Mode? If I ask Google to define it, it tells me it has something to do with computer networks, which isn't what is being discussed. If I paste in the whole quote, I get a lot of links to discussions in combat flight simulator forums. That's closer to the target, but the forums are also using their own special terminology, not explaining anything.

But if I simply type "explain" into ChatGPT and then paste in the quote, I get:

> The person making the statement is suggesting that in Air-to-Air mode (A/A), only the radar system is capable of providing target range information since the Laser Target Designator/Ranger (LTD/R) does not fire. This could mean that the LTD/R is either not intended to be used in this mode, it's not equipped on the aircraft in question, or it is not operational in the context they are discussing. The term "firing" in this context likely refers to the LTD/R's ability to emit a laser for targeting purposes.

It also provided a list of the acronyms used, with more detail about what they mean. This is an order of magnitude more efficient than trying to figure it out using Google.

The result is still perhaps a bit too technical, but that's very easy to fix. I just typed "Explain that last paragraph in simple terms," and I got:

Credit: Diego Thomazini - Shutterstock

When a fighter jet is ready to combat other jets in the sky (Air-to-Air mode), only the radar system can measure how far away the other jets are. The laser system (LTD/R), which can also measure distance, isn't being used to aim or "shoot" its laser at the target in this case.

Communication

In addition to being a powerful tool for your own understanding, AI can also be very helpful in communicating that understanding to others. One significant challenge in skepticism is explaining aspects of complex topics in a way that is more accessible to a general audience.

A problem I often see is skeptics unconsciously assuming that the person they are talking to has the same frame of reference as they do. It's very easy to think that your audience has a basic grounding in science and physics when in fact there are likely to be segments of that audience who have zero understanding of algebra and don't know what a molecule is.

You can just tell the AI to explain it at a certain level, such as: "Explain to a child why homeopathy does not work."

> Imagine you have a cup of hot chocolate. If you add more and more milk to it to make it less chocolatey, there will be a point where you can't taste the chocolate at all—it's just milk.
>
> Homeopathy is like that but with medicine. It takes a little bit of something that might make a healthy person feel a certain way and then dilutes it in water or alcohol over and over until there's almost none of it left—just like when the hot chocolate can't be tasted anymore because of too much milk. Because there's so little of the original stuff left, it's like trying to taste the chocolate in a cup of milk; there's nothing there to work as medicine. That's why scientists and doctors say homeopathy doesn't really work to cure illnesses.

Dynamic Texts

We are used to the resources we use in research being static. Dictionaries, encyclopedias, Google, textbooks, Skeptical Inquirer—these are all static texts that someone wrote to convey individual concepts. The text is written once for a specific audience. Often, the target audience is very broad, so for any one individual it might be too complicated or overly simplistic and labored.

What we are rapidly approaching is a significant diminishment of the role of static texts and the rise of dynamic texts that are both highly tailored to the individual and are ephemeral—existing only for the duration of your research.

This is somewhat like having a teacher who can explain things to you at your level. But it's more than that. It's a teacher with near-infinite knowledge and infinite patience who is always available to you. One that understands most languages, comprehends diagrams and written equations, analyzes data, writes code, and draws pictures.

Will dynamic text replace static text? To a degree. We'll always need static text to convey our individual experiences and perspectives. This article, for example, is about my personal take on AI and its applications in my skeptical activity.

But do we still need "explainer" articles that focus on a narrow aspect of a topic and are written for a broad audience? I think that will increasingly seem anachronistic as people become accustomed to having bespoke and interactive articles written for them in a few seconds whenever they want and then rewritten in a few more seconds if needed.

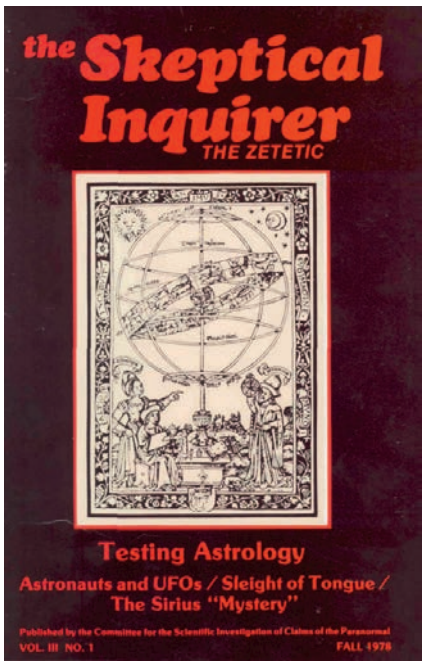
Dynamic text (and voice, images, and 3D simulations) are the powerful research tools of the future. That future has already started. Don't get left behind. ■

[THE TIME WARP: SKEPTICISM REVISITED—FROM THE FUTURE

CRAIG A. FOSTER

Craig A. Foster is a CSI fellow and director of research and evaluation at Northshore School District in Bothell, Washington.

Astrology: Beast of No Burden


the Skeptical Inquirer
THE ZETETIC
Testing Astrology
Astronauts and UFOs / Sleight of Tongue / The Sirius "Mystery"
Published by the Committee for the Scientific Investigation of Claims of the Paranormal
VOL. III NO. 1
FALL 1978

Welcome aboard, friends! In "The Time Warp," we aren't limited to present-day examinations. We use Skeptical Inquirer's rich history to examine skepticism—from the future.

On this voyage, we travel to Fall 1978 and the fifth issue of The Skeptical Inquirer, Vol 3, no. 1.

Some historical debris from the time: John Carpenter introduced the public to the *Halloween* movie franchise and the indefatigable Michael Myers (October 17). Jim Jones orchestrated the mass murder-suicide in Jonestown, Guyana (November 18). Anwar al-Sadat and Menachem Begin received the Nobel Peace Prize for agreements involving Egypt, Israel, and the Middle East more broadly (December 10).

In "News of the Committee," Paul Kurtz wrote that the magazine moved to quarterly publication and circulation was approaching 3,000. Kurtz reaffirmed skepticism's reliance on scientific methods and evidence.

In "News and Comment," Kendrick Frazier highlighted the publication's new magazine title. Frazier explained that former editor Marcello Truzzi took the rights to the name *The Zetetic* upon leaving to initiate a new publication, which he welcomed.

Some Skeptical Thoughts from the Time

James Oberg demonstrated how extraterrestrial-visitation believers misrepresent astronaut experiences to make them look like genuine ET encounters.

Ronald A. Schwartz analyzed dialogue between supposed psychic Peter Hurkos and guests to demonstrate how Hurkos tricks others into believing that he is genuinely psychic.

Ian Ridpath disputed the claim that a tribe in Mali, the Dogon, was visited by amphibious extraterrestrials in ancient times. According to Ridpath, support for this claim was based on misrepresentation of Dogon legends and an erroneous conclusion that Dogon knowledge of astronomy must have come from extraterrestrials.

Robert Sheaffer wrote a wonderful tribute to Bergen Evans (1904–1978), a longtime English professor who educated the public about ridiculous claims. In response to a question about finding nonsense, Evans said, "You don't have to look for it. You just stand in one place, and it rolls all over you."

Deep Dive

Astrology is one of those nonsensical ideas that rolls over people … *a lot* of people. Astrology is the practice of using astronomical events—such as the positions of the sun, the moon, planets, and stars—to make predictions about life on earth.

In "An Empirical Test of Popular Astrology," Ralph W. Bastedo described why skeptics took issue with astrology in 1978. To start, astrology was popular. Horoscopes were appearing in two out of three daily newspapers. Gallup polls indicated that roughly one in four adults embraced astrology.

Bastedo referred to the San Francisco Bay area as an astrologer's paradise. Telephone directories listed "thirty-four professional astrologers and astrological schools in the immediate vicinity of San Francisco and Berkeley" (17). The Oakland A's employed an astrologer to enhance player training. University of California, Berkeley, students expressed concern about astrology-based discrimination.

Even the editors of a San Francisco Bay area newspaper defended astrology in response to a 1975 anti-astrology manifesto signed by nearly 200 scientists (see Skeptical Inquirer Fall/Winter 1976 for more information). The editors also suggested that the time had come to test astrology once and for all.

Bastedo explained that testing astrology is complicated by inconsistencies within the astrology community. Western astrologers (as opposed to Chinese and Indian astrologers) maintain innumerable methods for integrating birthdays, birthtimes, and the relative positions of the stars, the sun, the moon, and planets. He also noted that in 1978, astrologers were bitterly divided over the precession of the equinoxes. Earth doesn't just spin; it also wobbles. This wobble slightly shortens the calendar year, which is based on equinoxes and seasons, relative to the amount of time

Earth takes to journey around the sun with respect to distant stars. This makes the ancient zodiac chart fundamentally flawed, because the sun is roughly one zodiac constellation off from the traditional zodiac chart.

These problems notwithstanding, Bastedo used existing data to test common astrological claims about personal attributes aligning with different zodiac signs. The results did not support astrology.

Of course, astrology's failure didn't stop people from believing. A few years later, First Lady Nancy Reagan even used astrology to influence President Ronald Reagan's schedule. This White House woo was concealed for years until Donald Regan, former Secretary of the Treasury, exposed the secret in 1988.

Several scholars have taken their turn at discrediting astrology, sometimes providing more unsupportive empirical evidence. Notable contributions include Shawn Carlson's demonstration that astrologers could not make accurate predictions (published in *Nature*, 1985), Geoffrey Dean and Ivan Kelly's review of empirical tests of astrology (published in the *Journal of Consciousness Studies*, 2003), and several comments and articles published in Skeptical Inquirer (to search online, visit https://skepticalinquirer.org/s/).

Astrology survived all this trouble. In fact, some evidence suggests that astrology is back in season, especially among younger adults. A 2022 YouGov poll suggested that 27 percent of people believe in astrology and 37 percent of people between eighteen and twenty-nine believe in astrology.

The accessibility of astrology via the internet is an obvious culprit. Rising belief in astrology might also be related to a sociological shift away from traditional religious practices, which allows younger people to devote less attention to Jesus's return and more attention to Jupiter's return (e.g., see Stuart Vyse, Skeptical Inquirer, September/October 2018).

This raises the odd possibility of skeptic-Christian unity against astrology's resurgence. Skeptics and Christians might have a shared interest in discouraging people from believing that everyday human affairs can be explained by astronomical circumstances.

Credit: shintartanya - Adobe Stock

Post-Warp Summary

A trip to 1978 shows that the problems with astrology have been known for decades. How, then, does astrology survive?

People naturally turn to astronomical events to make life feel more predictable, which generates a steady stream of pro-astrology folklore. Newcomers to astrology believe this folklore too readily and become advocates.

Articles and presentations that explain astrology's problems have limited influence, because astrology supporters are generally oblivious to them. Let's be real: Few astrology believers read *Nature* or Skeptical Inquirer. Astrology enthusiasts might even avoid anti-astrology sentiment because people tend to prefer information that supports their existing views (a.k.a., the congeniality bias).

When adherents do encounter arguments against astrology, they can deflect criticism in part due to the challenges inherent in demonstrating that one variable *never* influences another. But that isn't a victory for astrologers. Scientists likewise cannot prove that satanic worship *never* causes self-combustion or that listening to Steely Dan *never* causes constipation.

Instead, belief in astrology demonstrates why individuals should learn to place the burden of proof on those who are making a scientific claim.

There's no limit to the number of claims astrology supporters could make, so there is no way for critics to discredit all of them. In contrast, it is possible for astrology supporters to provide compelling evidence (not handpicked anecdotes) for astrology, in any of its nebulous forms.

The fact that astrologers have not provided this evidence, despite the fame that would inevitably follow and the murder of crows skeptics would have to eat, is more than just a bad sign for astrology.

It should be enough for people to suspend belief in astrology until somebody provides evidence for astrology.

Maybe I'm being unfair. Astrology has only had thousands of years to prove itself. ■

Note

The views expressed belong to the author and do not necessarily reflect the official policy or position of Northshore School District.

[SKEPTICAL INQUIREE BENJAMIN RADFORD

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Default Belief: Wise or Gullible?

Q: **Why do people automatically believe the first thing that they hear? Are they stupid or gullible?**
—T. Anderson

A: One perpetual skeptical lament is that so many people tend to believe what they're told, seemingly with little regard for factual basis or counterarguments. What else, we ask, could explain such widespread belief in astrology, alternative medicine, psychics, and so on?

Critical thinking is a skill, and like any positive skill it can—and should—be taught. Like most skills, you can learn it to some degree through mere exposure; you can attend talks, read books and magazines (such as this one), and so on. But to really get adept, you need to practice and apply it to everything from media to advertising to extraordinary claims. One key thing that many skeptics overlook in these discussions is that people believe most of what they're told not because they're *stupid* but because they *should*.

The psychology of belief is far too complex a subject to cover in this column, but a narrow frame of the question offers insights and lessons, especially in the realm of skepticism. Of course, there are many sources of belief, personal experience being among the most powerful. I can't count the number of times I've asked a person why they believe in ghosts or Bigfoot, and they look at me incredulously and say, "I saw it. *Of course* they're real!"

The mission of critical thinking educators, therefore, is not necessarily to

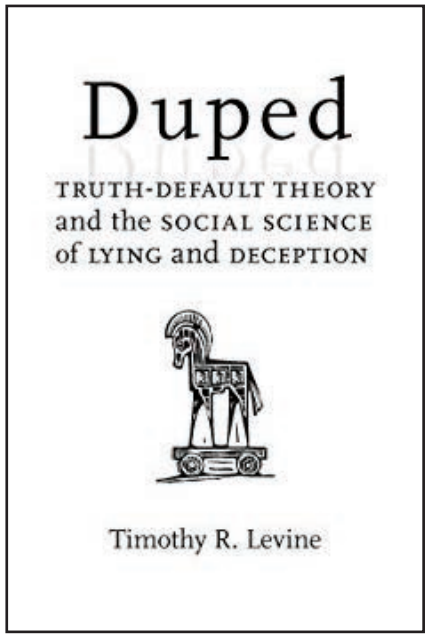
Credit: Dave - Adobe Stock

instill a default doubt in people or to raise the threshold of credulity across the board but instead to help them recognize the circumstances under which skepticism or greater scrutiny of claims is warranted. Countless examples are described in the skeptical literature, from being skeptical of vague terms such as *energy* outside of physics contexts (ghost hunting, New Age beliefs, and alternative medicine are chronic offenders) to using Occam's razor.

Believing what we're told—absent, of course, any clear counterevidence or reason to be skeptical—is healthy and adaptive. That's because the overwhelming majority of what we're told is objectively true. "What we're told" encompasses a wide variety of input, from advertising claims to medical advice. Sometimes we are informed about the world through signs and information; other times it's news or social media, and much of the time it's personal contact.

We are told when food is cooked by the chime of an oven; we're told when something's wrong with our car engine when a dashboard light comes on; we're told which exit will take us where we want to go on highways. Barring rare malfunctions and false alarms, we can rely on what we're told almost all the time. The same is true for what we're told by other people in virtually all circumstances. If a bank clerk tells you that you need to maintain a balance of $20,000 to qualify for a preferred rate on a checking account, that's almost certainly true. If you strike up a conversation with someone behind you in line at a Taylor Swift concert and the person mentions they grew up in Los Angeles and last saw Swift perform there five years ago, we assume it's probably true. Of course, they *could* be lying to us; maybe they grew up in Las Vegas and in fact had never seen her show. But all things being equal—and absent an extraordinary claim such as being a close relative of Swift's or having just flown in from Antarctica to see her show—we will tend to believe them.

The public is of course widely—and rightly—counseled to "believe the victim" in allegations. That is the appropriate default position for any plausible claim, and most of the time, the victim is indeed as claimed. This is also why, despite widespread concern to the contrary, both the general public and juries tend to believe victims when they come forth with accounts of assault, kidnapping, or other crimes (see Radford 2022). People who are inherently suspicious of most of what they're told tend to embrace conspiracy theories. They typically cherry-pick their trusted sources; government sources are engaging in perpetual cover-ups (of 9/11 attacks, extraterrestrial bodies, and so on)—unless of course they are (or claim to be) whistleblowers that endorse their beliefs, in which case they're bravely telling the unvarnished truth.



Truth Default Theory

One prominent social psychology explanation for this tendency is Truth Default Theory (TDT), proposed by Timothy Levine. In his book *Duped: Truth-Default Theory and the Social Science of Lying and Deception*, Levine notes that

> This presumption of honesty is highly adaptive. The truth-default enables efficient communication, and this presumption of honesty makes sense because most communication is honest most of the time. However, the presumption of honesty makes humans vulnerable to occasional deceit. A key insight of TDT is that this trade-off is more than worth it. What we gain in terms of efficient communication and social functioning is far more valuable than the cost of being deceived on occasion. Further, there are times and situations when people abandon their presumption of honesty. TDT describes when people are expected to suspect a lie, the conditions under which people conclude that a lie has been told, and the conditions under which people make lie judgments correctly and incorrectly. (Levine 2019)

In addition, TDT relies on fourteen fundamental assumptions including that 1) most people are honest most of the time about most subjects; 2) deception *per se* is relatively infrequent, and outright lies are even less frequent; 3) deception is not normally distributed, so most lies are told by a few prolific liars; 4) deception is typically done for a specific reason or goal; 5) the assumption of truth is abandoned when there is some salient reason or trigger to do so (e.g., catching a lie); and 6) most deception is not correctly identified as such at the time through the speaker's demeanor and only becomes apparent through later information (Levine 2014). Furthermore, the sorts of lies people tell tend to be innocuous, such as agreeing that a mediocre dinner was "fantastic," a gaudy dress on sale is flattering, or that a child's stick figure drawing is a "masterpiece."

Anchor Biases

Another piece of the puzzle is anchoring, one of the most powerful of the cognitive biases; it causes us to rely heavily on the first piece of information we encounter about a given topic. Because that novel experience or information anchors our expectations and assumptions, we end up filtering new information through that framework. One common example of anchoring bias occurs in advertising. When a price tag for a microwave oven says "Compare at $200," it's setting an anchor point for what—we're told—we can expect to see the same item sold elsewhere. The $150 price seems like a bargain, though of course it might sell across the street for $140. The same occurs when prices are increased by 20

percent and then put on "sale" at a 20 percent discount. Other times it's unintentional, as when a coworker at a new job tells you who to "watch out for" in the office; if you are told to expect generous (or rude) behavior from someone specific, you're more likely to interpret ambiguous behavior that way than if you hadn't been primed to do so.

There's another, related, cognitive bias at work: confirmation bias. Because we subconsciously tend to seek out information and examples that support our expectations and assumptions—and ignore or discount contrary information and examples—we tend to be swayed by them. There's also a related concept called "truth-bias," the tendency to believe that another person's communication is honest regardless of its actual honesty.

Because the amount of available skeptical material on a given topic is greatly—often exponentially—outnumbered by more sensational and credulous materials (for various reasons, including Brandolini's Bullshit Asymmetry Principle, i.e., that the amount of energy needed to refute bullshit is an order of magnitude bigger than that needed to produce it), the average person is far more likely to encounter, and thus believe, wild and erroneous claims before they encounter skeptical refutations.

As Levine and his coauthor David Clare note, TDT research has

> implications for current issues, such as fake news. The passive, unquestioned belief of implausible, false content suggests that people are highly vulnerable to fake news, far-fetched conspiracy theories, and disinformation campaigns. Whereas increased vigilance would decrease this vulnerability, chronic suspicion is likely to spill over into increased skepticism of legitimate information sources. From the TDT perspective, viable countermeasures need to involve either highly specific triggers unique to malicious content or a prevention approach targeting and removing the problematic content from the environment. (Levine and Clare 2019)

Changed Facts, Unchanged Minds

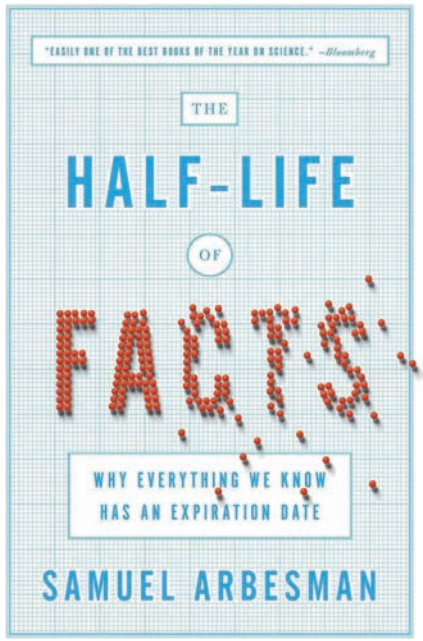
Stereotypes are hard to break of course, but that's only part of the answer. It's also that people rarely update their information or opinions about things. Once we learn a fact, it's typically "baked in" to our memories. Many professionals, especially doctors, are required to take continuing education courses to stay licensed and certified. It's a way to keep up with changes in a rapidly changing field; what was a best practice for treating high blood pressure or cataracts five or ten years ago may be obsolete or even malpractice today. But there's no equivalent for laypeople, and something they heard or learned in high school or college will often be taken as self-evident, immutable fact regardless of whether it has since been revised or superseded by better information.

Facts are only true at a certain time and under a certain set of circumstances. But the world is constantly changing, in ways both miniscule and dramatic, thus a fact about the world is accurate *as of that time*. It was once a fact that there were forty-eight states in the United States, but that is no longer a fact; there are now fifty (not including commonwealths). The point is that many facts we have incorporated into our knowledge base have changed and may no longer be true. That Texas is south of Canada has been true my entire life, but that my friend Amy is unmarried has not (she got married a few years ago).

Samuel Arbesman discusses this issue at length in his 2012 book *The Half-Life of Facts: Why Everything We Know Has an Expiration Date*. He notes:

> Ultimately the reason errors spread is because it's a lot easier to spread the first thing you find, or the fact that sounds correct, than to delve deeply into the literature in search of the correct fact. … Bad information can spread fast. And a first-mover advantage in information often has a pernicious effect. Whatever fact first appears … whether true or not, is very difficult to dislodge. … It's like trying to gather dandelion seeds once they have been blown to the wind.

Very few people generate new content on social media (and a significant portion of those who do are part of organized misinformation campaigns); most simply and blindly pass along whatever information they receive.



In today's misinformation-marinated world, skeptics and critical thinkers must be vigilant if they want to avoid becoming part of the problem. Critical thinking (including being aware of anchoring biases and TDT) is part of an ongoing effort to balance belief and disbelief; it's not about doubting new information *a priori* or *per se* but instead demanding evidence for claims. People can complain about misinformation and disinformation from Russia and biased news media all they like, but change begins at home. ■

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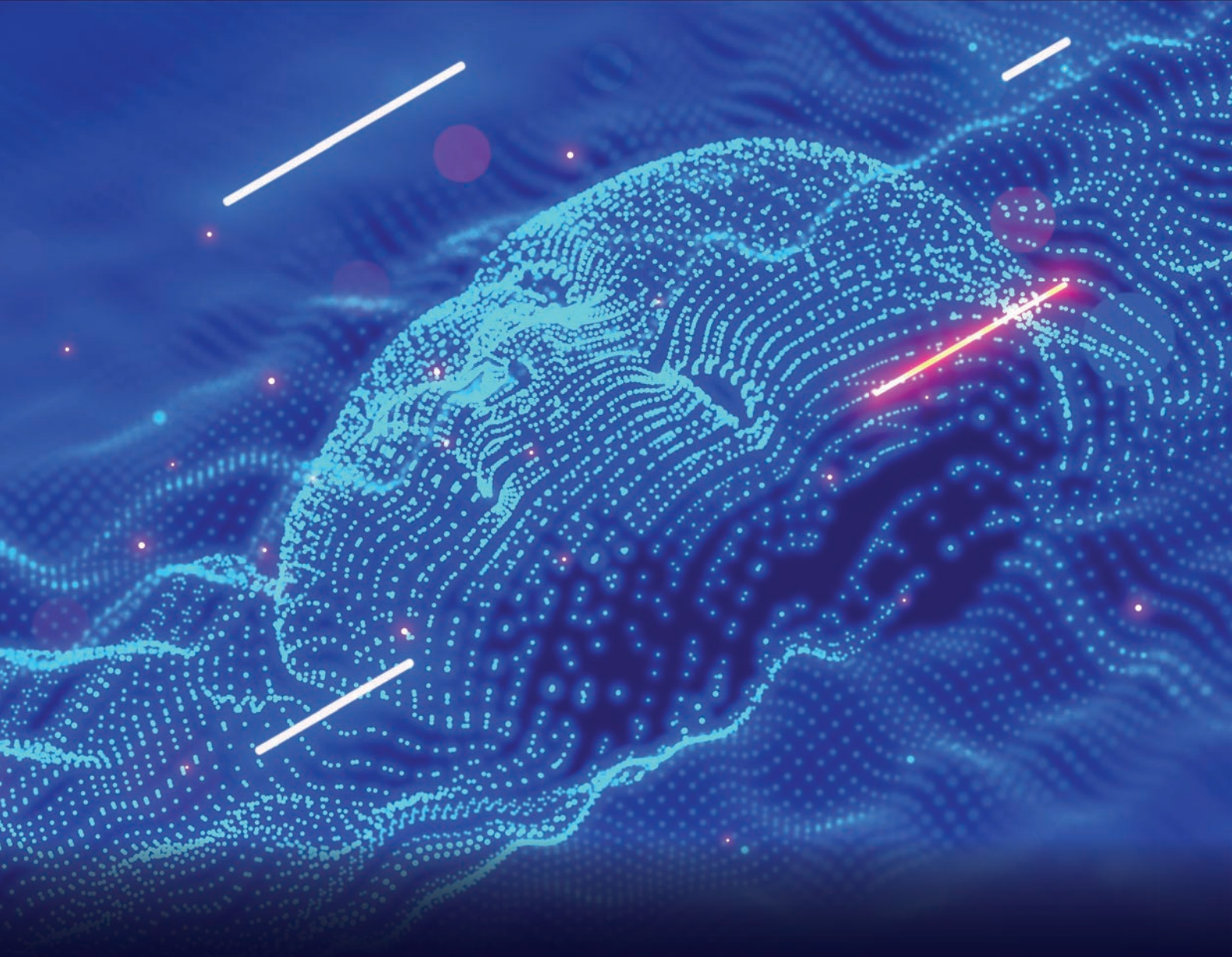


Looking for the Bright Side of the AI Apocalypse

Reason for hope? A digital deluge of deepfakes and other AI-generated deceptions may compel a cognitive upgrade for humanity.

GUY P. HARRISON

Rumors of impending artificial intelligence (AI) doom got you down? Take heart, there may be light at the end of this tunnel—and not all of it from the headlight of a self-driving locomotive. No, sorry, you can't be sure that a precocious bundle of algorithms won't take your job (Cao 2023; Georgieva 2024). There is no guarantee that a rogue or faulty AI system won't trick someone into launching a nuclear missile (Johns 2023; Andersen 2023). We can't even be sure that some enterprising task-obsessed AI won't repurpose our atoms to maximize paperclip production (Bostrom 2014, 123–124). Scariest of all, perhaps, AI might deliver world domination into the hands of a Wall Street firm (Tegmark 2017, 3–21). Or, maybe T.S. Elliot got it right, and there will be more whimper than bang as we end up in *Matrix*-style pods simmering in the stale juices of desperate escape. Whatever ultimately happens, however, there is the possibility of a profoundly positive outcome emerging along the way. But first, there will be pain.

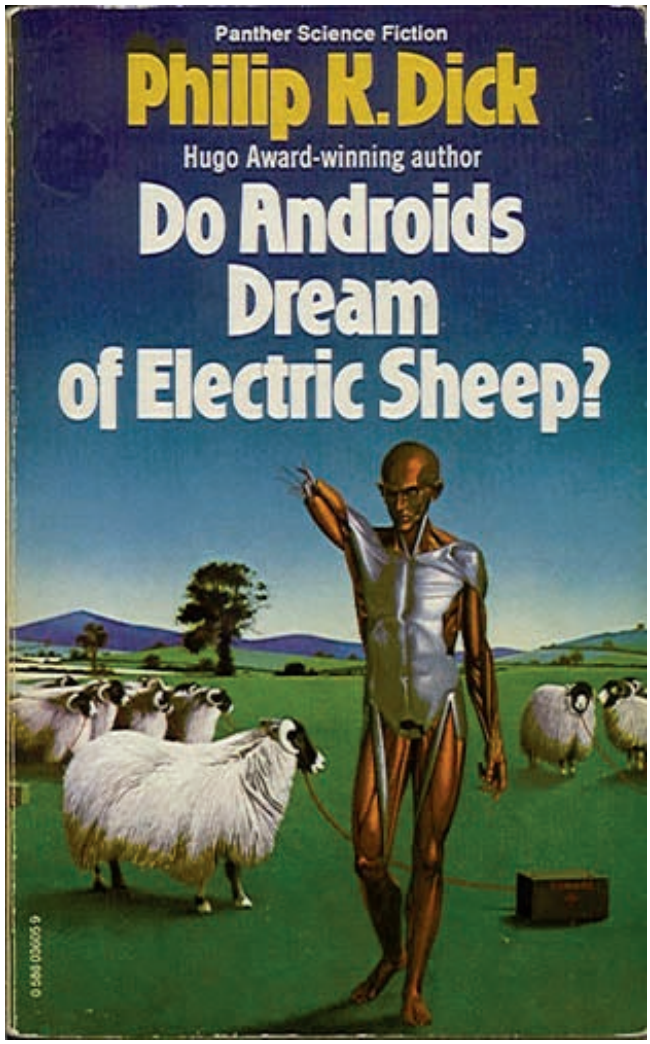
A new world is dawning, and it's going to hurt. First, we taught computers to play chess, then we taught them to lie. AIs with remarkable language-, audio-, and image-generating abilities are here and improving fast. This makes everyone vulnerable to fraud and irrational states of mind more than ever, because these powerful and fast-improving tools offer countless ways to manipulate, exploit, and do harm. Based on world history, the daily news, and the videoclip of a Joe Rogan podcast episode I just watched, it is clear to me that our present neural machinery is not up to the challenge.

We will fail to stay ahead of the coming tsunami of digital deceptions, because we are living contradictions, the intelligent/stupid/rational/emotional species. We follow. We believe before we think. We confuse knowledge for wisdom and confidence for competence. To some degree, all of us bend the knee to the misperceptions, fears, fantasies, and irrational whims of our own ghostly subconscious. Though able to reach the Moon and explore the internal worlds of atoms, we remain unprepared as thinkers with minds too often outmatched by the pace and complexities of the modern world we made.

The adult population is teeming with sleepwalkers and victims-in-waiting because humankind, generation after generation, neglects to teach its children how to think critically (Harrison 2021). Our default setting is to accept or trust nearly anything that feels good, comes wrapped in shiny packaging, or is endorsed by an authority figure. Our most absurd beliefs travel halfway around the world before critical thinking can put on its shoes. And now AI enables bad actors to sharpen, amplify, and accelerate the usual plague of cons, social discord, and madness while also introducing countless novel variations and additions.

Respect the bias blind spot (Pronin et al. 2002). None of us should assume we are too smart to be conned by what is coming. The current quality of AI-generated deceptions, hoaxes, scams, and frauds is formidable, but what is looming on a very short horizon is alarming. Moreover, we must place all this in the context of a misinformation and disinformation crisis that is well underway. Infinite scrolls of half-minute videos hypnotize millions of people now. Social media newsfeeds have been fraying societies and corroding democracies for years (Harrison 2017, 73–129). Researchers have clocked fake news spreading online six times faster than real news (Vosoughi et al. 2018). Soon we may long for the bygone days of charming emails from Nigerian princes bearing gifts and quaint QAnon lunacy.

We cannot know if artificial general intelligence (AGI) will be created or evolve this century, the next, or ever (Russell 2019, 4–11). AGI, a true superintelligence, would resemble the godlike entity popularized by many science fiction writers. It would be capable of independent learning, problem solving, and creativity vaguely comparable to that of a human brain but with immensely more speed and power. Whether AGI happens or not, however, recent advances may be enough to bury us in a paradigm-flipping avalanche of deepfakes (hyper-realistic photos, voice simulations, and videos). AI tools



now available, for example, are being used increasingly for sophisticated phishing scams, password hacking, voice-cloning phone scams, fake websites, CEO scams, fake pornographic videos of real people, and more (Henry 2023; Associated Press 2023; 2024).

Anyone doubting our vulnerability need only consider the ominous preview provided by social media. Over the past two decades, various social media companies have had remarkable success identifying, cultivating, and monetizing their users' fear, prejudice, lust, love, anger, and hate. And they accomplished it with relatively dumb algorithms and limited AI systems (Harrison 2017). Unfortunately, there are strong indications that these companies are getting worse rather than better at reining in the misinformation and disinformation that thrive on their platforms (Nix and Ellison 2023). Add to this the upward trend of governments and politicians using AI to manipulate public opinion and censor online information (Funk et al. 2023). Finally, a survey of nearly 1,500 global experts cited AI-generated misinformation and disinformation as "the most severe global risk anticipated over the next two years" (World Economic Forum 2024, 8).

Our reality is about to become as slippery and surreal as a Philip K. Dick novel.

[AI]

Much of the coming AI impact will be helpful and entertaining, no doubt, but will there be running and screaming later? When greater AI powers are in the hands of irresponsible, incompetent, unethical, and criminal users the following scenarios are likely:

- More people believe more absurdities with more confidence than ever before.
- Increasing numbers of corrupt and/or incompetent politicians are elected to high office in democracies.
- Trust in science and expertise in general plummet. Demagogues and charlatans fill the void.
- Dictators and totalitarian governments enjoy unprecedented surveillance and control over their populations.
- Medical quackery flourishes causing global suffering to rise and life expectancy to decline.
- Theocratic leaders in religious fundamentalist societies use AI to identify LGBTQ people, blasphemers, and heretics in hiding for persecution and worse.

People will suffer. People will die. Nevertheless, let's try to find something positive in all this. An unprecedented global catastrophe of fraud and delusion could possibly provide the catalyst that helps us lift ourselves to a better place.

AI trickery and turmoil could force our species into a long-overdue cognitive upgrade. We typically imagine future scenarios in which hard tech enhances human brains, a top-down process involving physical implants and interfaces. But it could be a bottom-up organic phenomenon, a grassroots transformation in the form of collective rejection of blind trust and baseless belief. An optimistic vision of the future for sure but not impossible. Keep in mind that the tools of critical thinking are always there, available for anyone to pick up and use. They don't require extraordinary intelligence, extensive formal education, or great private or public financial investment. More than anything, thinking well is a matter of awareness and motivation (Harrison 2015, 15–34). Critical thinking could become a new cultural universal for humanity, a core code taught to every child and expected of every adult. Perhaps all we need is a dramatic shove in the right direction to achieve critical mass and come to a point where enough people realize that it is stupid to be stupid. Should an AI-fueled wildfire of psychological chaos lead us to intellectually bottom-out as a species, we would have nowhere to go but up. Positive adaptation might be seen as a no-brainer, even by the brainless. Second guessing could become second nature. Everyone would question everything, and the proud, aggressive, stubborn silliness so common and disheartening today might lose all appeal overnight. For the first time in history, the practical application of skepticism, an appreciation for science, and the preference for evidence-based decision making could be in vogue with a majority.

Like a painful but lifesaving medical treatment, maybe our world needs some AI disruption and destruction to spark change. Nothing else has worked, and we can't afford to wait on evolution. With perfectly calibrated lies and irresistible hoaxes everywhere all the time, it will become more difficult than ever to "just believe." Who can continue to toe the flat-Earth line when a million different Oscar-worthy YouTube videos—each one narrated by the enthusiastic AI-generated

voice of Neil deGrasse Tyson—make the case that our planet is definitely shaped like a doughnut? What will dedicated QAnon troopers do when cognitive dissonance rips through their minds in the wake of role-reversing deepfake videos depicting a pack of cannibal babies chasing Tom Hanks and Oprah Winfrey? Even the last-standing UFO enthusiast, exhausted by an infinite stream of pitch-perfect AI-shenanigans, will break: "You know, I'm just not sure about this new flying-saucer video. Sorry, but I'm gonna need confirmation from several credible sources and a convergence of scientifically vetted evidence."

Imagine flawless images of the Dealey Plaza grassy knoll hitting Facebook, Instagram, and TikTok feeds, each one revealing a platoon of time-traveling deep-state assassins taking aim at JFK. What fun is a conspiracy theory without any mystery? When Bigfoot photos are in sharp focus and full color, the big guy won't be so compelling. Alex Jones, Russell Brand, Graham Hancock, Jeremy Corbell, Tucker Carlson, and all other professional credulity vortexes will be rendered redundant. Who needs their schtick when a billion amateurs can enlist AI to create alternate realities as good or better than anything they can come up with?

There is no way to know if we will get the heaven or hell scenario from AI. Maybe it really will cure cancer, solve poverty, and invent a longer-lasting lightbulb. Or it might determine that *Homo sapiens* is pointless bio-fodder and show us the exit. Perhaps the most likely outcome, however, will be a murky mix of good and bad. That seems to be our fate with most things. Assuming the landing is soft enough to be survivable, let's hope our problems with AI at least provide the motivation we need to finally wake up, grow up, and become a more rational species. ■

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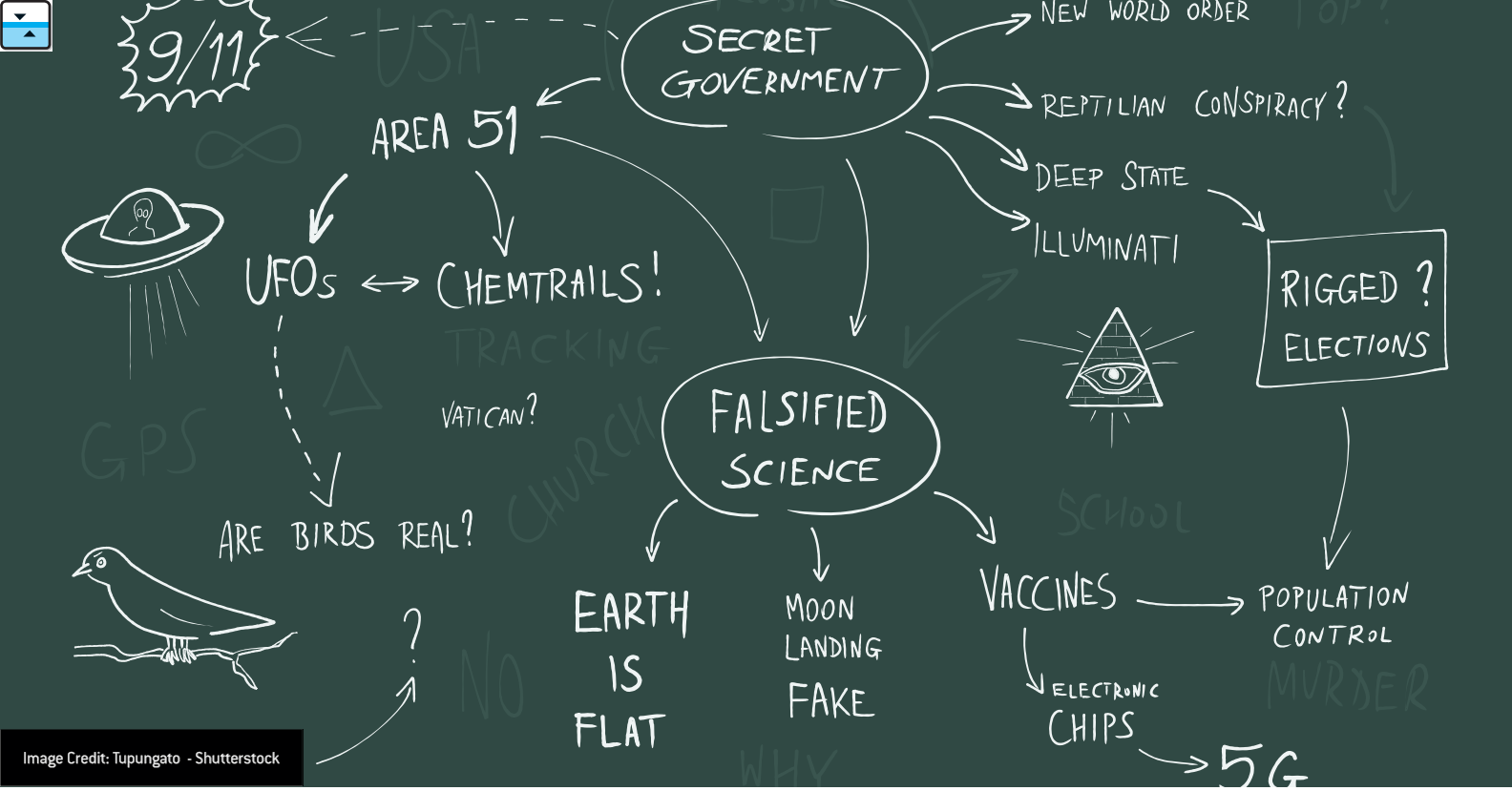

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Analyzing Conspiracies through Folklore, Epidemiology, and Artificial Intelligence

Dangerous rumors, conspiracy theories, and misinformation—from Blood Libel myths to anti-vaccination legends to QAnon—have plagued humanity for millennia and exploded in the internet age. But new tools are emerging that can help identify and mitigate the problem.

BENJAMIN RADFORD

Digital disinformation is becoming a widely recognized threat—especially to public health—with unprecedented amounts of misinformation available online. In his first advisory, Surgeon General Vivek Murthy (2021) issued a stark warning that "Health misinformation is a serious threat to public health … we can and must confront it together." World Health Organization Director-General Tedros Ghebreyesus (2020) concurred: "We're not just fighting an epidemic; we're fighting an infodemic." Several epidemiological models have been proposed to fight this infodemic, including one in the *New England Journal of Medicine* ("The Covid-19 infodemic" 2021), which notes that "medical professionals and patients are facing both a pandemic and an infodemic—the first caused by SARS-CoV-2 and the second by misinformation and disinformation."To address this problem, the authors "believe the intertwining spreads of the virus and of mis-information and disinformation require an approach to counteracting deceptions and misconceptions that parallels epidemiologic models by focusing on three elements: real-time surveillance, accurate diagnosis, and rapid response." Indeed, the Center for Inquiry (publisher of Skeptical Inquirer) has been active in addressing medical misinformation on many fronts, from its Coronavirus Resources webpage to ongoing lawsuits over homeopathic products.

Conspiracy theories—a perpetual and pernicious bane of skepticism and critical thinking—have traditionally been examined through several prisms, including folklore, psychology, and social psychology. More recently, the field of computational analysis has emerged to help identify, address, and mitigate rumors and misinformation. Among the field's pioneers is Timothy Tangherlini, a professor of folklore at the University of California at Los Angeles and a fellow of the American Folklore Society. "I study narrative, how stories emerge and circulate on and across social networks; rumors, legends, conspiracy theories, and so on," he explained in an interview (Tangherlini 2022). Tangherlini has researched storytelling in a medical context, looking for examples at the emergence of vaccine hesitancy and exemption-seeking behavior among

parents on parenting websites and blogs.

I first became aware of Tangherlini's work as a graduate student in public health at Dartmouth College, studying interdisciplinary approaches to mitigating medical misinformation. Adopting the infodemiology approach, his work also looked at actual conspiracies versus conspiracy theories, for example comparing "Bridgegate" (in which then–New Jersey governor and former presidential candidate Chris Christie allegedly conspired to close a key bridge lane in 2013 as a form of retaliation against his political enemies) and "Pizzagate" (in which Hillary Clinton allegedly participated in child trafficking at Comet Ping Pong, a Washington, D.C.–area pizza restaurant; see "Pizzagate and Beyond," SI, November/December 2017).

Computational Folkloristics

Tangherlini researches narrative structures of conspiracy theories. He and colleagues note that "Despite the attention that conspiracy theories have drawn, little attention has been paid to their narrative structure, although numerous studies recognize that conspiracy theories rest on a strong narrative foundation or that there may be methods useful for classifying them according to certain narrative features such as topics or motifs" (Bandari et al. 2017). The team "developed a pipeline of interlocking computational methods to determine the generative narrative framework undergirding a knowledge domain or connecting several knowledge domains."

Using research on public health concerns (specifically, anti-vaccination blog posts) and combining it with folklore legend research, the model consists of three primary components that populate the narrative structure. Just as every story has certain consistent elements (such as a setting, protagonist, conflict, and resolution), the model studies three main components: actants (people, places, and things), relationships between those actants, and a sequencing of those relationships.

> Any storytelling event, such as a blog post or a news report, activates a subgraph comprising a selection of actants (nodes) and relationships (edges) from the narrative framework. The more often an actant-relationship is activated, the more likely it is to be activated in future tellings, with additions and deletions becoming less and less common. … As more people contribute stories or parts of stories, the narrative framework is likely to stabilize since the nodes and edges become more heavily weighted each time they are activated. (Tangherlini et al. 2020)

The result is a graphical model that allows researchers to visualize the underlying narrative patterns in a given dataset (see, for example, Figure 1).

Tangherlini explains that "Much of the internet, on message boards and internet forums, for example, are 'noisy'—

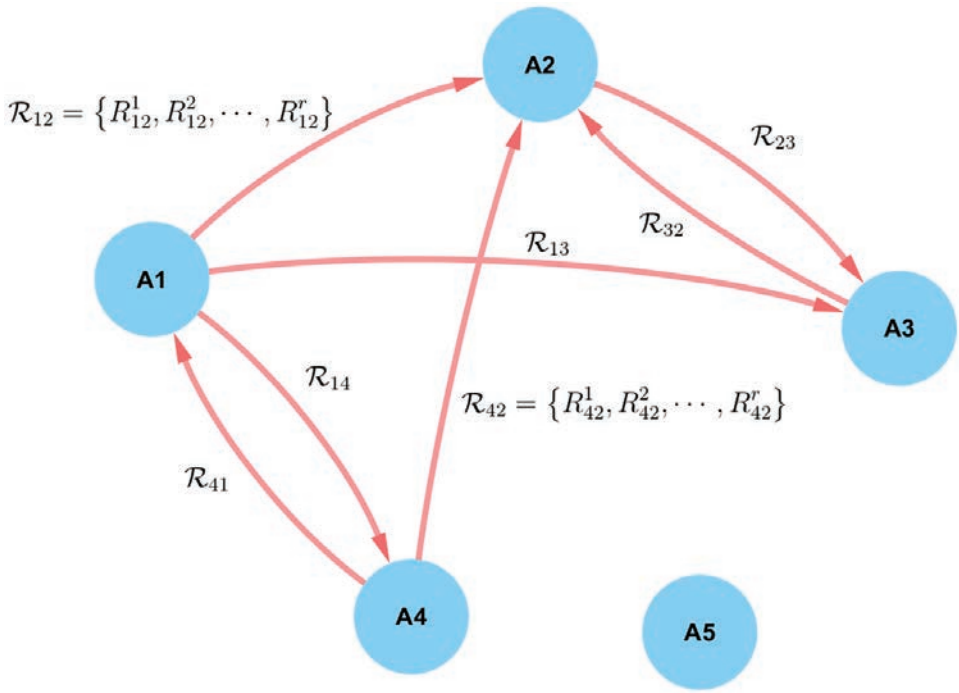

Fig 1. A graphical model of narratives.

For a story with a set of actants A1, …, An, the narrative can be divided into a set of contexts. In each context, the story is summarized as a set of interactions (relationships) between actants as shown in the figure. Therefore, an edge between actants A1 and A2 carries a set of relationships that exist between the two actants, and the significance of each relationship in this context. It is important to note that relationships come from not only verbs, but also other syntactic structures in the text that imply relationships

Figure 1. Graphical model of rumor and narrative analysis from Tangherlini et al. (2020)

they have a significant amount of irrelevant posts, spam, junk characters, and so on. What we're interested in is the bias, because that bias is an outward representation of belief and worldview" (Tangherlini 2022). He and his colleagues didn't come up with the network idea, but "we operationalized it and came up with a formalization of it so that if you can discover the actants in a space, and the relationships between those actants, you can aggregate them into context-aware domains."

In this way, for example, researchers can trace and map the spread of misinformation and memes in the same way that epidemiologists can trace and map the spread of pathogens. And like public health surveillance that can alert officials to likely potential areas of concern (where, for example, pandemics emerge or vulnerable populations are exposed to high-risk environments), Tangherlini's model has predictive power. Real-time data surveillance can help researchers identify those at elevated risk along pathways of misinformation. Tangherlini notes that the research isn't limited to conspiracy theories and applies broadly to any misinformation:

> If there's a narrative framework in any of the data, then that will come out … the system we've devised is agnostic to input [i.e., topic]. … Social media is really nothing other than the folkloric process. If we think of folklore as informal cultural expression circulating on and across social networks, then, well, that's literally what Facebook and Twitter and all other social media sites are.

By viewing social media as networks of both transmission and inoculation, Tangherlini highlights the strong parallels between skepticism, folklore, and epidemiology, studying how and why things circulate in a given population. "Disease is in some ways very similar to ideas; you can get vaccinated against a disease, and you can also get inoculated with an idea. Once you get an idea, you can't unsee it or unhear it. You might forget it after a while because it's no longer creating meaning for you, but it's still there" (Tangherlini 2022).

The models Tangherlini and his colleagues have developed can be applied in both top-down and bottom-up initiatives. For example, just as skeptics and folklorists can offer expertise in messaging and countering misinformation, they can also make use of existing surveillance networks. One example he gives is that "frontline workers can provide a huge service being part-time ethnographers themselves and start to collect the attitudes and expressions and the stories that they encounter during their clinical practice." Nurses, field workers, social workers, and others could, with little additional effort, be trained in basic folklore gathering techniques. This could be as simple as paying attention to and tracking informal patient comments that contain medical misinformation and inquiring about the specific sources of that information—say, a friend, family member, or social media website.

> That would be incredibly helpful because then you can start to map the narrative domains that are being activated by the storytelling and the beliefs the patients have. Once you understand the narrative domain, you can see where there may be things of low likelihood, beliefs more easily shown to be [false]. By doing so you'd also understand the signal senders, people who act as mediators between lots of other people. Those are the people to identify and then work with them to come up with communication that's helpful. … Understanding what the beliefs are in complex communities and developing messaging that aligns with the cultural needs of the groups are in the long-term going to be more successful than "Just trust us, we're scientists."

Image Credit: berkeley.academia.edu

Despite his successes, Tangherlini has encountered some resistance. "Using these network models is practically Epidemiology 101. With epidemiologists and applied mathematicians we get more traction, [but] with public health we often get, 'Oh, we'd love to have you on the team but, really, we've already figured this out, thanks anyway.'" Tangherlini has found that "most public health groups are very protective of their stomping ground; they're like, 'No, *we* do this, *we* do the healthcare messaging, *we* have the surveys, *we* know what to do.' [That's their choice, but] I unfortunately wind up getting lots and lots of data about people *not* listening to your messaging, or responding to your messaging in exactly the opposite way than you wanted them to respond."

Tangherlini's work has attracted attention outside academia as well. *The Guardian* (U.K.) reported that he and other researchers used artificial intelligence tools to extract key actants from thousands of anti-vaccination social media posts—using a folkloric approach:

> Tangherlini, whose specialism is Danish folklore, is interested in how conspiratorial witchcraft folklore took hold in the 16th and 17th centuries and what lessons it has for today. Whereas in the past, witches were accused of using herbs to create potions that caused miscarriages, today we see stories that [Bill] Gates is using coronavirus vaccinations to sterilize people. A version of this story that omits Gates but claims the vaccines have caused men's testicles to swell, making them infertile, was repeated by the American rapper Nicki Minaj. The research also hints at a way of breaking through conspiracy theory logic, offering a glimmer of hope as increasing numbers of people get drawn in. (Leach and Probyn 2021)

Mapping rumors allows the broader stories to emerge, providing the opportunity to challenge parts of the story and introduce skepticism. As Tangherlini notes, "If people are looking at it and thinking 'Wait a minute, I don't trust at least this part of the narrative,' you might be able to fracture those low-probability links between domains. And if you can fracture or question them, you get the potential for community level change" (Leach and Probyn 2021).

Emerging artificial intelligence research can help with these analyses; because the narrative patterns are content-neutral, the same analysis can be brought to bear on other conspiracies and rumors:

> Discerning fact from fiction is difficult given the speed and intensity with which both factual and fictional accounts can spread through both recognized news channels and far more informal social media channels. Accordingly, there is a pressing need, particularly in light of events such as the COVID-19 pandemic, for methods to understand not only how stories circulate on and across these media, but also the generative narrative frameworks on which these stories rest. Recognizing that a series of stories or story fragments align with a narrative framework that has the hallmarks of a fictional conspiracy theory might help counteract the degree to which people come to believe in—and subsequently act on—conspiracy theories. … Knowledge derived from our methods can have clear and significant public safety impacts, as well as impacts on protecting democratic institutions. (Bandari et al. 2017)

This intersection between folklore, data analytics, and public health has the potential to be a powerful tool in identifying and mitigating misinformation. This could be especially useful because of the increasing prevalence of "automated bots flooding parenting conversations with posts engineered to fit the antivaccination narrative framework," and algorithms are especially well suited to identifying content created by other algorithms (Bandari et al. 2017).

Identifying Misinformation

Other research has explored the use of logistical regression models to help public health officials distinguish between true and false health-related rumors circulating online. For example, Zili Zhang, Ziqiong Zhang, and Hengyun Li (2015) examined "the associations between the authenticity of health rumors and some indicators of the rumors themselves, including the lengths of rumor headlines and statements, the presence of certain features in rumor statements and the type of the rumor: wish or dread." Citing research from the field of information manipulation theory (e.g., McCornack 1992), the authors concluded that false messages and rumors tend to contain linguistic and syntactical red flags that suggest deception. For example, false messages tend to contain a higher word count than do truthful messages; they also tend to be less specific. Focusing on health rumors on a Chinese-language website, the researchers developed eight hypotheses about internet health rumors: those with longer headlines/statements are more likely to be false; those referencing the names of specific people, places, and numbers are more likely to be true; rumors that contain information about their source are more likely to be true; rumors that contain cues suggesting they originated overseas are more likely to be false; messages that contain relevant images and hyperlinks are more likely

Image Credit: aleutie - Adobe Stock

to be true than those without; and dread-inducing or fear-mongering internet health rumors are both more common and more likely to be true than those referencing hoped-for and positive results.

The study concludes:

> The indicators of an Internet rumor's veracity can be gleaned from the rumors themselves. Consistent with our findings, previous studies report significant linguistic differences in communication between when people are telling the truth and lying. … The effects of false rumors thus can be reduced if users are explicitly warned how to tell what information may be false. To be effective, such warnings must specifically explain the indicators of a false rumor rather than generally mention that the rumor is false. (Zhang et al. 2015)

The researchers also reference the interdisciplinary nature of analyzing and refuting medical misinformation, for example highlighting the roles that folklorists and fact-checking skeptics (such as Skeptical Inquirer and Snopes) play.

Details of how complex systems, artificial intelligence, and machine learning can be used to detect misinformation are beyond this article's scope, but the basics are simple. Most misinformation appears in written form and on networks. Because of that, statistical analyses can help identify relevant features and behaviors on those networks that relate to the spread of misinformation, including users and pathways (and, less often, origins; see Torabi and Taboada 2019). Adopting a similar approach to Tangherlini's work, Yuxi Wang and colleagues (2019) note that "three major components are involved in the creation, production, distribution and re-production of misinformation—agent, message and interpreter." The research on medical misinformation "generally employ[s] sophisticated modelling and simulation techniques to identify the rumor propagation dynamics. However, this is still

in its infancy and one recent systematic review of behavioral change models found that most papers investigating spread of health-related information and behavioral changes are theoretical, failing to use real-life social media data."

Wang's group found that "while there have been studies of the spread of misinformation on a wide range of topics, the literature is dominated by those of infectious disease, including vaccines. Overall, existing research finds that misinformation is abundant on the internet and is often more popular than accurate information." Furthermore, those propagating medical misinformation are, unsurprisingly, typically people without formal institutional affiliations, along the lines of "citizen scientists" or "expert patients" whose "narratives of misinformation are dominated by personal, negative and opinionated tones, which often induce fear, anxiety and mistrust in institutions" (Wang et al. 2019).

A 2019 editorial in the *British Medical Journal* also noted that a study of vaccine-related posts on Twitter found three categories of accounts most likely to spread misinformation were Russian trolls, bots, and "'content polluters' devised to spread malware or unsolicited commercial content and to direct readers to sites that generate income" (McKee and Middleton 2019). A 2020 Issue Briefs from Syracuse University's Lerner Center for Public Health Promotion titled "Digital Disinformation Is a Threat to Public Health" also identified bots as a recent entrant into the misinformation field. Citing a Carnegie Melon University study, "Researchers have determined that nearly half of all the Twitter accounts promoting the reopening of America [during the pandemic] were likely bots. The bots are one element of coordinated and partially automated disinformation campaigns, which may be responsible for achieving political agendas and sowing divide. Bots can be deployed in staggering numbers to promote conspiracy theories with disturbing real-world consequences" (McNeill 2020). The study found that of 200 million tweets discussing COVID-19, 82 percent of the top fifty most influential Twitter accounts were bots, and 62 percent of the top 1,000 retweets were shared by bots (McNeill 2020).

Although the literature on rumor research in the public health field is not extensive, significant progress has been made. For example, a 2016 study examined misinformation about Ebola on Chinese microblog platforms during the 2014–2015 outbreak (Fung et al. 2016). Six years later, during the COVID-19 pandemic, a team of Indian researchers identified improved methods for identifying medical misinformation using machine learning models, resulting in a 97 percent accuracy rate (Biradar et al. 2023).

Finally, although social media is a primary source of misinformation, it can also be used to fight the problem. In India, for example, community health workers called accredited social health activists (ASHAs) work in rural areas responding to COVID-19 concerns. In addition to directing the public to vaccination locations, counseling, and other duties, they are charged with monitoring social media posts containing misinformation. For example,

> Several leaders of the elected far-right Bharatiya Janata Party have been vocal about drinking cow urine to prevent COVID, with a few even making videos of it. Last year, its leaders organized a gaumutra (cow urine) drinking event. [ASHA worker Bharti] Kamble came across several such messages. "What do you even say to something like that? A lot of people in fact did try it." She started sourcing scientific messages from doctors and began messaging about COVID treatments that actually worked. "If you directly counter misinformation saying it's wrong, then people don't listen and start provoking you," she explains. Instead, her antidote is disseminating scientific information in the easiest possible way. Eventually, she says, people realized cow urine is no cure for COVID … "Even if people disagree with our messages, they do read and discuss. We spend at least three hours every day countering such misinformation." (Jain 2021)

Image Credit: Center for Countering Digital Hate
THE DISINFORMATION DOZEN
WHY PLATFORMS MUST ACT ON TWELVE LEADING ONLINE ANTI-VAXXERS

Responding to Rumors

The measures and methods discussed to identify and analyze medical misinformation are of course only half the battle. In these pages, Mick West (2022) offered advice gleaned from years of personal experience trying to refute misinformation online. He urges a quick response ("A viral bunk video is like a runaway nuclear reactor. You need to get the cooling rods in there as soon as possible"); fighting fire with fire (that is, using the same medium and techniques where the misinformation is first encountered; "People who just watched an entertaining video on a topic of interest to them are unlikely to read an article explaining why that video was wrong. But they *might* watch an interesting looking video response"); and brevity (keep it short and punchy, addressing main points upfront and offering links to additional information). West notes that "We cannot always stop a falsehood from going around the world. But if we get our boots on quickly enough, we can travel along and minimize its effect."

A quick response requires skeptics and public health agencies to be proactive, ideally monitoring rumors in real time to stay current on what's circulating, where, and among which

people. Understanding the nature of the misinformation is also vital. To take a recent example, reasons for COVID-19 vaccine hesitancy were often misunderstood and misrepresented in the news and on social media. It's a form of misinformation *about* misinformation.

It may be of little consequence whether the average person understands the nuances of *why* some people refused the vaccine, but it's paramount for public health officials. Much of the reporting about the low vaccination rates among African Americans, for example, centered on historical distrust of doctors and the medical establishment. But this is not the whole picture, and focusing on that too heavily risks not only victim-blaming an already marginalized community but also missing opportunities to mitigate misinformation.

Health education campaigns tend to be written for a general audience and provide accurate (if generic) information about, for example, the benefits of weight loss, recognizing signs of a stroke, and so on. Campaigns that target and address misinformation, on the other hand, benefit from a more targeted approach, because misinformation claims themselves tend to be specific. Corrective information that's too specific may be impractical (unless it's widespread, such as the false claim that COVID-19 vaccinations induce infertility), and information that's too broad will be dismissed as irrelevant.

Because of this, the corrective information should when possible match the level of generalization of the misinformation. Take, for example, the following concerns that have been expressed regarding COVID-19 vaccine hesitancy: "Vaccines are dangerous"; "Vaccines are untested"; "Vaccines were rushed"; "Vaccines contain aborted fetal material"; "Vaccines cause miscarriages"; and "Vaccines cause menstrual cycle disruption." Each of these has a larger message custom tailored to a specific audience and thus gain traction with different people. The claim that vaccines are linked to abortions, for example, would give pause to many pro-life religious conservatives, and the rumor that vaccines cause miscarriages may be relevant to women of childbearing inclination, whereas the claim that vaccines were "rushed" (that is, of unproven safety) would have traction among a much broader audience.

The response should therefore be roughly proportional to the specificity and prevalence of the original claim. It's impossible and impractical to launch a full-scale campaign addressing all forms of misinformation on all levels. Folklore, like wildfire, is notoriously difficult to contain. But a proactive approach can pre-identify likely variants of these rumors based on past experience and predictive patterns, allowing for public health to quickly adapt preexisting templates for a rapid response once detected via surveillance.

Though I have focused on the public health–related consequences of medical misinformation, it's important to keep in mind that rumors and conspiracies have broader consequences, including economic, political, and social ones. In the end, Tangherlini acknowledges, "You're never going to reach the 'true believers,' but you would be able to have a much more nuanced understanding of storytelling in these communities." Referencing the then-prominent news stories of low vaccination rates among police officers, he asked, "For example: Why are cops so against vaccines? … I suspect in their storytelling you'd find the answer pretty quickly" (Tangherlini 2022). Skeptics and epidemiologists could of course conduct surveys and focus groups to determine the answer, but implementing folklore-inspired IT to the task looking at existing narratives could be much faster, cheaper, and effective at both diagnosing the key objections and mitigating them. Harnessing cutting-edge technology, including AI, to stem age-old myths and misinformation may be a task for the next generation of skeptics. ■

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Alternative Therapies for Menstrual Pain

DR. JEN GUNTER

Editor's note: This article is a slightly revised excerpt from Dr. Jen Gunter's new book, Blood: The Science, Medicine, and Mythology of Menstruation. *While this excerpt focuses on alternative therapies, the rest of the book highlights evidence-based information. Thank you to Dr. Gunter and Citadel Press for granting permission.*

Pain, as defined by the International Association for the Study of Pain, is an "unpleasant sensory and emotional experience" and "a personal experience that is influenced to varying degrees by biological, psychological, and social factors." It's the only sense that includes an emotional component. That doesn't mean it's in your head; rather, this definition encompasses the mind-body connection. As such, pain is not just the electrical signal the brain receives and interprets; many other factors, such as anxiety, depression, adverse childhood experiences, other pain conditions, sleep, stress, belief systems, and cultural factors, can all modify the pain experience in complex ways. Because of these complexities (and inadequate funding for studies), medicine doesn't always have answers, or the answers have side effects. Sometimes a well-studied therapy doesn't fit with an individual's belief systems. And many people have had their pain dismissed by medicine. So, there are several reasons people wish to try alternative approaches.

Treating a medical condition is in many ways like taking a trip. You are at point A, meaning in pain, and want to get to point B, less pain. Therapies are the routes between points A and B. Some routes have better maps than others, and some appear physically impossible—for example, going through a mountain where no tunnel exists. With medical care that has been studied, we can make statements such as "Sixty-five percent of the time, if someone takes Highway 1, they can get from A to B, and we know this because several hundred people took that route and there was someone waiting at point B, counting how many made it through." Alternate routes are riskier. We can say, "Well, 50 percent of people said this route worked, but we don't have good evidence to show they made it to point B." Or perhaps, "That route looks like a shortcut that can't possibly work because that road doesn't exist." Alternative medical therapies are like these alternate routes. Some inhabit a medical gray zone, meaning the hypothesis is biologically plausible and hence intriguing, but the studies aren't good enough to make a recommendation for the therapy. Others have less plausible hypotheses and/or terrible data.

People sometimes think, "Well, if the hypothesis sounds good, why not?" The trouble is, lots of seemingly brilliant medical hypotheses turned out to be not just duds but harm-

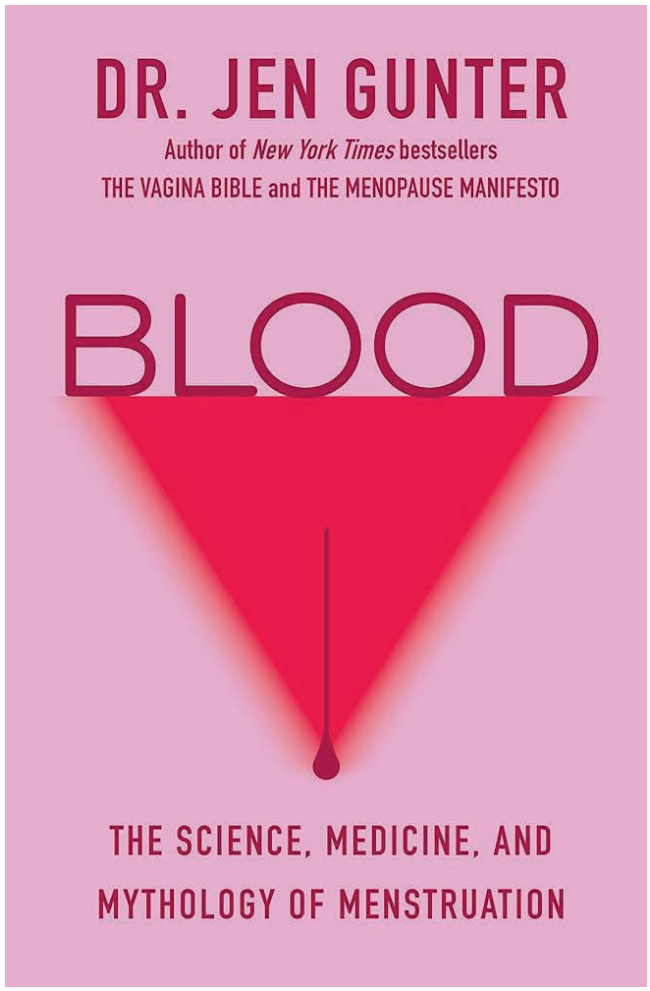
ful. One example is not eating peanuts until age one to reduce peanut allergies. That sounds like it makes sense, right? We should wait until a baby's immune system can handle peanuts. So, for years, that was the recommendation. As it turns out, that strategy increases the risk of peanut allergies. Another example is taking vitamin E to prevent heart disease. Researchers thought it was a good idea to test this hypothesis because people with diets higher in vitamin E seemed to be less likely to develop heart disease. And hey, vitamin E is an antioxidant, and vitamins must be safe; after all, they are natural and in food. That study came to an abrupt end because of worse outcomes for those who took vitamin E.

For doctors, alternative therapies are a difficult line to walk. Some are low cost and low-risk, but some are expensive and time-consuming, and some, like vitamin E, have hidden risks. If the data were good, these therapies would be standard of care. Although many functional medicine providers and naturopaths do so with confidence, I couldn't look someone in the eye and recommend an untested and expensive "period repair" supplement. Alternative therapies are often promoted as "natural," which ties into the health halo of that word (*natural* being equated to effective and safe). However, there are no supplement trees or farms, so be wary of false advertising.

It's not wrong to try an alternative therapy. It's your body and your decision. What is wrong is for a medical provider to misrepresent the therapies. You can make an informed choice only if you are given accurate information. Consider two ways a healthcare provider might discuss turmeric for period pain:

1. "Turmeric is a good option for painful periods. It's an ancient therapy long used in traditional medicine, and it contains the powerful chemical curcumin."
2. "There are a few studies on turmeric for painful periods, but overall, they are low-quality, so it isn't possible to draw conclusions. The people who propose turmeric typically do so based on a substance it contains: curcumin. Some people recommend turmeric supplements, and others curcumin. It's debatable whether curcumin is biologically active (whether it does anything meaningful in the body), but even if it is, less than 1 percent of curcumin that is ingested enters the circulation. In addition, curcumin is removed from the bloodstream within minutes (it's metabolized very quickly), so even if it manages to be absorbed, it's not likely to hang around long enough to do anything. In higher-quality studies, curcumin has never been shown to be effective for any medical condition, and there are cases of liver failure associated with turmeric supplements."

If you were to decide to take turmeric for painful periods based on the first advice, you would be making an uninformed choice. But you wouldn't realize that, because you wouldn't know your medical provider didn't give you all the details. On the other hand, deciding to take turmeric after hearing the second description would be an informed choice. You'd have heard about the biological constraints, what research has shown and not shown, and potential downsides. It's easy to see why many people are attracted to the much shorter, more optimistic but much less informative and ultimately unethical presentation.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With all of that in mind, here are some alternative options you might hear about and can consider for painful periods or endometriosis-related pain. For the record, I discuss some of them in the office, but I do so with the principles of informed consent that I just used for turmeric, which I suppose can be summed up as a "warts and all" approach.

Diet

Can diet affect painful periods? Maybe. And that's really a maaaaaaybe. Studies have linked a variety of diets and/or foods with less period pain: low-fat vegetarian, higher in fruit, lower in legumes, lower in omega-6 fatty acids, lower in alcohol, lower in meat, higher in dairy. Some of these recommendations are contradictory, which is problematic. For example, vegetarians often eat legumes and omega-6s, so if a vegetarian diet is helpful, how is a diet higher in legumes and omega-6s harmful?

Diet data largely comes from observational studies, meaning people told researchers whether they had period pain and what they typically ate. Observational studies have a lot of issues. First, people's recall isn't always accurate. Second, we may not know who has endometriosis and who has painful

periods. But even more importantly, what we eat is associated with a variety of factors that might affect pain and are unrelated to the actual food. For example, living in poverty can decrease the availability and affordability of fresh fruits and vegetables and can reduce access to health care, which can increase the risk of having untreated causes of pain. People with period pain may be more likely to choose ready-made meals because they are in too much pain to grocery shop and/or prepare food, but ready-made meals tend to be lower in fiber and contain seed oils, which have omega-6s. Or people with pain may feel comforted when they eat certain foods. Basically, diet can be linked with period pain in myriad ways, but not as a cause-and-effect kind of relationship. Finally, people have been eating very different diets around the world for millennia, and no culture seems immune from period pain.

To answer the question about diet and menstrual-related pain, we need randomized studies, meaning one group is randomly assigned to one diet and another almost identical group is assigned to a different diet, and then these two groups are followed to see if, over time, they report different levels of period pain. We just don't have this data.

Omega-6 fatty acids have been getting the villain treatment lately—being blamed for everything from type 2 diabetes to heart disease to brain fog and, yes, painful periods—and it's not uncommon to see period coaches and naturopaths vilifying seed oils because they are high in omega-6s. Omega-6 and omega-3 fatty acids are polyunsaturated fats that are essential for our bodies. Omega-6s are found in vegetable oils, nuts, and seeds; omega-3s are found in fish, vegetable oils, some nuts, flax seeds, flaxseed oil, and leafy vegetables. Some people believe omega-6s are inflammatory, and from a period standpoint, one theory is that the linoleic acid in omega-6s increases arachidonic acid, a necessary step in making prostaglandins, substances that cause painful periods. However, less than 1 percent of the linoleic acid in our food is converted into arachidonic acid, and arachidonic acid itself can be anti-inflammatory. Basically, it's complicated. But there are quality studies that don't link omega-6s with inflammation. In fact, they're associated with lower rates of heart disease, which suggests they aren't inflammatory.

It's important to remember that seed oils, the oils high in omega-6s, tend to be used in ultra-processed foods and fried foods in restaurants, which are linked with inflammatory health conditions. However, the omega-6s aren't the culprit; these foods also tend to have a lower nutritional value and are calorie-dense.

What about people who say they feel better, cramp-wise, after changing their diet? It's definitely possible to feel better within a few cycles after a dietary change. For example, if you increase your fiber intake, you are less likely to have constipation, and most people feel better when they aren't constipated (that's the understatement of the year). Improving diet quality may reduce bloating or heartburn and, again, that might make you feel better. Moreover, just the idea of self-care (and changing diet can be self-care) can make people feel better. It is also possible that changing diet affects pain in a way we have yet to understand.

Credit: nod design - Adobe Stock

The best we can say is that a traditional Western diet—one that is higher in calorie-dense, nutritionally poor foods, lower in fiber, and higher in saturated fat—is the least healthy diet overall. Trans fats are inflammatory and should be avoided for many health reasons. (They are banned in the United States and Canada but are still available in many countries.) Aiming for healthier diet choices is beneficial for many reasons, and if you are healthier overall, that may well be better for period pain. Given how many awful messages girls and women receive about their bodies, and the state of food policing, in the absence of high-quality data, my default is to simply consider these basics:

- Aim for at least 25 g of fiber a day. I really like this approach, as it adds something rather than taking something away. Foods high in fiber are associated with a low risk of breast cancer, colon cancer, and heart disease.
- Increase your intake of fruits and vegetables (this helps

in the fiber department too).
- Try to eat two servings of fish a week (assuming you aren't vegetarian or vegan).
- Reduce animal fats. Swap in cooking oils for butter, introduce two to three vegan meals per week, choose leaner cuts of beef or eat less beef, and switch out whole milk for 2% milk, skim milk, or even plant-based milks.
- Consult a registered dietician for good advice on dietary changes that are healthier overall. Personally, I'd take a hard pass on anyone who vilifies seed oils or sells supplements. Also avoid people who call themselves "functional nutritionists," as that isn't a recognized branch of health care.
- Reduce alcohol intake. Not many people want to hear this, but overall, less is better.

Exercise

The data here are not the greatest, but overall, it seems that exercise may reduce the intensity of painful periods. Because of the low quality of the studies, we can't specify what type of exercise—whether aerobic, weightlifting, or some of both—or how many minutes is optimal. One theory is that exercise may reduce inflammatory mediators that are part of painful periods, but there is a lot of "maybe" and "possibly" here. However, we know exercise is beneficial for overall health, so it may be indirectly helpful for menstrual pain.

When I was a teen with painful cramps, if someone had said, "Well, you could treat your pain by exercising," I would have rolled my eyes. When my cramps were at their worst, any movement was painful. I've explained how pain can spread to other body parts, and for some that can be the abdominal wall. For me, it was often physically painful to stand up straight. In addition, given my menstrual diarrhea, there were times when I simply couldn't be far from a bathroom. I didn't exercise regularly, so telling me to start would have been as helpful as telling me to fly to the moon. However, when I began to get into running in my thirties, I did find that exercise was helpful when my cramps were uncomfortable but not excruciating. I don't know whether it was because exercise helped my mood and made me feel better that way, or because it provided a distraction (a valid therapy for pain), or because it lowered inflammatory mediators and directly reduced my pain. Over the years, the better I got at exercising, the more I could do it when I had cramps.

This is all anecdotal, and there are many other potential explanations, but if you suffer with bad cramps and don't exercise regularly, consider starting an exercise regimen on the days you don't have pain. Ideally, you'd get 150 minutes of moderate-intensity aerobic activity and two days of muscle strengthening activity a week. At the very least, this movement will make you healthier overall, and it will likely help your body deal with the stress of menstruation. If you find that exercise during your period helps, great; do it. If you find that it makes things worse, then don't do it.

Dietary Supplements

Despite what you might see on Instagram, Facebook, and TikTok, there is no quality evidence supporting supplements for painful periods. It's important to acknowledge that even the information I've included here is based on lower-quality studies.

There are two kinds of supplements: those that contain a single active ingredient (for example, magnesium or calcium) and those that contain multiple products (usually combinations of vitamins, minerals, and botanicals/herbs). Single-ingredient supplements that have been studied, may make some sense biologically, and seem low-risk include:
- Magnesium: 360 to 400 mg a day for three days, starting one day before the onset of bleeding. Magnesium can cause diarrhea, so keep that in mind.
- Thiamine (vitamin B1): 100 mg daily.
- Fish oil capsules: 6 g (containing 1,080 mg EPA and 720 mg DHA), divided into two doses a day, or 2 g of krill oil a day.
- Vitamin B6: 200 mg a day.
- Ginger capsules: 750 to 2,000 mg a day for the first three days of bleeding.

It's best to avoid products with multiple ingredients, especially those with "proprietary blends" listed on the label. These combination products have not been tested, and with a "proprietary blend," you have no idea the exact amount of each ingredient in the blend. So you, the consumer, assume all the potential risks.

My advice to anyone who wants to try any of these products for period pain is to give them a go for three cycles, then decide if the benefit is worth it. If you do go this route and try a supplement, I suggest a brand that has been verified by an independent third party (for example, the label should say USP verified), meaning the ingredients have been independently verified for quality and the bottle contains what is listed on the label.

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Pain is an individual experience, and for some people who want to avoid pharmaceuticals, trying less-studied interventions, such as supplements, may be appealing. In addition, dietary changes such as adding more fiber, fish, and plant-based protein and meeting the health guidelines of exercise may or may not directly help with pain, but they will help overall health and should always be encouraged. ■

Jen Gunter, MD, is an internationally bestselling author, obstetrician, and gynecologist with more than three decades of experience as a vulvar and vaginal diseases expert. Her bestselling books *The Vagina Bible* and *The Menopause Manifesto* have been translated into twenty-five languages. She has a blog called *The Vajenda*; is the host of *Jensplaining*, a CBC/Amazon Prime video series that highlights the impact of medical misinformation on women; and is the recipient of the 2020 Media Award from The Menopause Society. Her TED Talk, "Why Can't We Talk about Periods?," was the third most viewed TED Talk of 2020, leading to the launch of her popular podcast on the TED Audio Collective, *Body Stuff with Dr. Jen Gunter*. She can be found online at www.thevajenda.com.

Author image credit: Talia Herman

True Haunting, or Not?

JD SWORD AND KENNY BIDDLE

In 1971, years before both the bestselling novel and film *The Amityville Horror* thrilled the public with one of the most well-known "true stories" of a haunted house, NBC News aired a short, six-minute clip documenting the exorcism of the allegedly haunted Chicago couple Edwin and Marsha Becker. Decades later, Edwin Becker self-published an account of these events and the "first televised exorcism" in his novel, *True Haunting*. Since then, according to websites such as The Lineup (Grey 2022) and Collider (Ehli 2023) the Beckers' story is set to become a major motion picture starring Jamie Campbell Bowers and Erin Moriarty. All this attention raises the question: What evidence do we have for believing *True Haunting* is what its name suggests? (Our investigation is based on the claims presented in the book and multiple interviews; the film has not yet been released.)

The Story of *True Haunting*

The story begins on July 25, 1970, when Edwin (Ed) Becker saw the real estate advertisement for a two-flat apartment building on Campbell Street[1] on the near-north side of Chicago. The building was being sold as part of an estate sale, with the current occupant, an "evil old witch" named Myra, being one of the last surviving members of the family who built the house. After negotiations, the Beckers moved into the building on December 1.

Not long after, alleged paranormal phenomena began: dishes and other small items would be found misplaced; Ed's garage key was found bent into an L-shape; the telephone would be found off the hook; and Marsha's electric kitchen mixer allegedly floated in midair. On December 20, the Beckers' parish priest arrived at the house to bless it. As the priest began reciting the blessing in Latin and raised the aspergillum into the air, Ed claims it exploded. Visibly shaken, the priest left without finishing the blessing and later refused to return.

After speaking with his neighbor, Ed learned "the Verdere family had built the house around 1900. It had never been occupied by anybody other than family members" (Becker 2011). The Verdere family consisted of the mother, who allegedly died in the apartment, three sons—Robert, the first son; Ben, the second son, who died in the bathroom and whose death led to the estate sale; Henry, the third son who died young—and a daughter, Myra. It was the ghosts of Ben and Henry whom Ed blamed for the ghostly goings on.

Even after both Ed and Marsha agreed that their house was haunted, Ed explained that they didn't know what to do about it. Then, during a visit to his Aunt Helen, Ed claimed "She handed Marsha a paperback book and whispered, 'Read this.' The book was a new tale of horror … '*The Exorcist*'"

(Becker 2011, 98). Now, you would think they would be poring over this tome looking for help, but Ed alleges he didn't read the book until years later. After finding a listing in the Yellow Pages for the Illinois Psychic Research Group, Ed and Marsha arranged to have an exorcism performed on the house. NBC News Correspondent Carole Simpson covered the exorcism, and as it began, "It was about that moment that everyone felt a strong gust of wind. So strong, it rattled the blinds" (Becker 2011, 120). Ultimately, the exorcism was declared a failure by Ed and Marsha, and Ed's sister, whom he describes as a lifelong student of the occult, decided to move in, further drawing the ire of Henry by playing with a Ouija board.

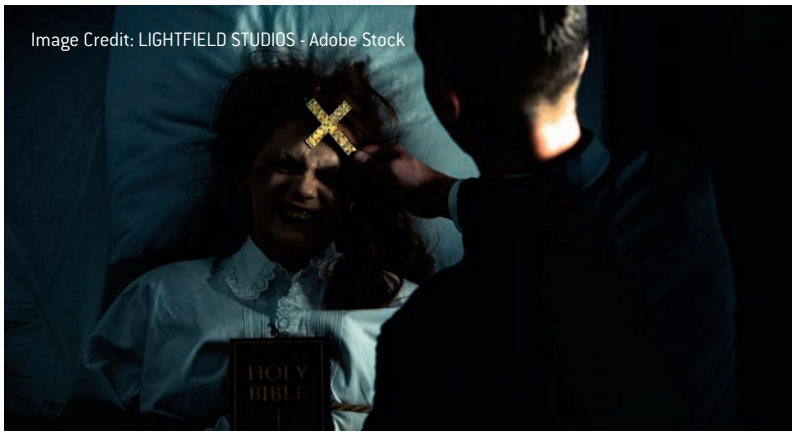
While all this was going on, Ed got a loan to move out in 1972 but made the astonishing decision to continue to

While filming the séance, Becker claims a ghost made a slight (and quick) appearance in this bedroom doorway. The arrows point to parts of the alleged ghost.

A view from inside the small bedroom where the alleged ghost was recorded. Note the right side of the window, which had curtains at the time of filming, would have just been on the edge of the camera view.

rent the allegedly haunted property, explaining: "I had mixed feelings about disclosing the potential problem, but it was I that insisted we keep it a secret. I felt that if we told potential tenants about the ghosts, we wouldn't get anyone to rent the apartment. I also felt that if they didn't antagonize the ghosts—as I did—the activity would be minimal and maybe even ignored" (Becker 2011, 154).

If the place was indeed haunted—or at least if Ed Becker *believed* it was—this was an astonishingly unethical and irresponsible decision. Unfortunately, the ghosts persisted in bothering those tenants as well (so much for the activity being "minimal"), prompting Ed to finally sell the house.



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Ed Becker's Evidence for Ghosts

On page 125 of *True Haunting*, Ed Becker discusses how, years after the televised exorcism, he was finally able to view the news segment. He writes, in part, "in one camera shot that was supposed to be of the empty dining room, was an image captured. In the doorway, a small white object is seen moving where no one is present. Since we were all behind the camera when this shot was filmed, the movement is unexplainable. Our ghost actually made a short, undiscovered appearance on this film" (Becker 2011). He emphasizes this with a screen capture posted to his Facebook page with the caption "There is [*sic*] the doorway is a ghost" (Becker 2015).

First, we'd like to point out the obvious contradiction: Ed stated the white object is "unexplainable," then immediately explains it is a ghost. This is not the conclusion of a critical examination but arguably that of a die-hard believer who latches onto anything that may help sell a book. The segment in question only lasts about nine seconds and is presented in low resolution, 1971 VHS-like quality video. The footage is also overexposed, creating many washed-out bright areas. The anomaly in question appears inside a small bedroom off the dining room, which puts it in the background of the TV shot. The door to this small room is open, and the angle of the TV camera allows the viewer to see inside, although it is mostly dark (due to film quality). The room itself is described as one of "three tiny bedrooms" (Becker 2011, 5).

Based on the photograph of the same bedroom in the first-floor apartment,[2] the bedroom we're interested in appears to be about seven feet wide from the doorway to the opposite wall.[3] On the opposite wall is a window, which likely had blinds and curtains (as seen in other images). After watching the footage multiple times, we hypothesize the anomaly is the end of a window curtain being blown by breeze from an open window. The interior of the room is slightly illuminated when the anomaly sways (because it sways like a curtain in the breeze) and allows a little more light to pass through. This, of course, is our best guess, because we weren't there, and the quality of footage is very low.

During the NBC segment, Simpson provides a crucial detail when she explains, "We the spectators felt a strong gust of wind from an open window that [moved] the curtains and rattled the Venetian blinds." Ed has claimed in multiple interviews that Simpson got this detail wrong, that there were no open windows at all. Considering the amount of inaccurate information in Ed's book, we'll give more credence to the journalistic reporting of Carole Simpson.

Some Problems with the Story

The NBC News segment isn't the only problem with the story of *True Haunting*. During our investigation, we uncovered some facts that contradict Ed Becker's story.[4] We found that the house was sold to Ed Becker in 1970, and at that time was owned by five heirs, consistent with his account. The heirs were Erna, described on the deed as "a spinster" and the most likely candidate for the character of "Myra"; her brother William; William's wife, Mary; Robert; and Le Roy. Ed claims that "the 'Verdere' family built the house and that they were the only ones to ever live there," but this is not true. The 1920 census indicates that there were *two families* living in the house at that time—neither of which was the Verderes.

Genealogy and census records also cast serious doubt on the tragic history of the "Verdere" family. As reported in the book, there were three sons and one daughter—William, Frederick, Joseph, and Erna. Frederick (Fred) was the oldest son, and when the mother died in 1966, the property was split among Fred, Erna, and William. Fred died November 13, 1969, which could possibly correspond with the character "Ben" in the story and how his death prompted the estate sale—albeit two years later. *True Haunting* indicates that the mom had a son who "died young, in his twenties" (Becker 2011, 100). This is false. Joseph died in 1961 at the age of forty-seven. Based on available records, it doesn't appear as though *anyone*—the mother, Henry, or Ben—ever died in the house, which, if true, would undermine the premise that any ghosts are there.

Some More Problems with the Story

In *True Haunting*, Ed claimed that when he approached the family's parish priest for an exorcism and was turned away, the priest apologized, saying, "'I'm sorry, but I must excuse myself from this conversation. I had hoped that you wouldn't feel this way … good day.' He turned and left the room quickly" (Becker 2011, 89). But in an interview done for *The Big Séance Podcast* with Patrick Keller, Ed said "He ordered *me* out of the rectory and off the grounds" (Keller 2016). A slightly more dramatic retelling, isn't it?

With respect to the sale of the house, Ed claims that the copy of the sale deed included on the very last page of *True Haunting* shows the "sale of the house for $10. We truly did 'give' it away" (Becker 2011, 176). This, too, is false. The actual document shown in the book is Warranty Deed paperwork, the *transfer tax* which was provisionally given as $10, but which was *actually* $18. Because most states calculate the transfer tax per every thousand dollars of property value, if the rate was $10 per thousand, then we can conclude the consideration amount, which according to real estate agent Jay Starr is "probably what it was sold for, what the value of the property was" (Starr 2022). That would've been $18,000. So much for "giving the building away."

Of course, we should mention that the bestselling novel *The Exorcist* happened to be released the same year as the Beckers' televised exorcism. It's interesting to note that, in both the book and the film version of *The Exorcist*, playing with a Ouija board is what invites the supernatural activity—the same as in *True Haunting*. Ed Becker admits to having owned a copy of *The Exorcist* but claims he didn't read it until years later. This raises the question: Why mention *The Exorcist* at all if the book ultimately had nothing to do with the ghosts or the exorcism in *True Haunting*? Are we expected to believe the similarity between both stories is mere coincidence?

The entire premise of *True Haunting* revolves around the deaths of the Verdere family. The book very explicitly attributes the paranormal activity to "Ben" and "Henry" Verdere. However, years later, Ed Becker no longer seems so sure of the details of his own story, saying on the season two finale of the SyFy series *Paranormal Witness* (SyFy Channel 2012), "I started to attribute—*whether I was correct or not*—but I started to attribute all my activity to Ben Verdere" (Becker 2011) as well as later telling Patrick Keller on *The Big Séance Podcast*: "You're talking to the most dominant, strong energy on that side of the fence, in that dimension. And they will lie, so, much. Like I addressed 'Ben,' I don't know if it was 'Ben' or not that was creating the activity. Whatever I was toying with was something I couldn't see" (Keller 2016).

Except that Ed claimed he and others *could* see what they were "toying with": he claimed his first-floor tenant saw someone "slender, brown hair, 5'9" to 5'11" [with] an ugly or distorted face" (Becker 2011, 100), and he claimed he saw "an old lady sitting outside on my front stairs. She was dressed in a heavy coat, and appeared frail" (Becker 2011, 65).

Finally, because the ghosts continued to bother Ed Becker's tenants, one might expect that reports of their paranormal activity would persist to the present day. However, we contacted the current owner of the house, who very bluntly stated that he had owned the property for many years and nothing even remotely similar to what was described in the book has happened. What he *did* reveal was that he's been bothered by the living—people with interest in the sensational story who figured out the real location.

A Not-So-True Haunting

Ed Becker's story as told in his book *True Haunting* has inconsistencies and contradictions. Because it was a self-published work, no publisher has to stand behind the claims Ed makes, and it is unlikely that there was any editorial oversight or that fact-checking was done. The evidence that has been presented in support of the story is poor quality and hardly convincing. By dropping so many details of the house's location (not to mention posting an actual street view), Ed and Marsha have brought undue stress and unwanted attention to the current owner and occupants of the house, all for the sake of selling a book and promoting a movie. Ed tries to say his story is nothing like *The Amityville Horror* or similar movies and that he is nothing like most paranormal investigators; he is wrong on both counts. ■

Notes

1. Campbell Street is not the actual location of the house previously owned by Ed Becker. On the Warranty Deed on the last page of the book, the location is given instead as Campbell Avenue.

2. Ed Becker states on page six of *True Haunting*, "With the exception of the location of the front entrance door, which entered into the living room, the apartments were very much the same." With this in mind, using images from the first-floor apartment should be acceptable.

3. Using the doorframe for reference and a standard interior door height of eighty inches (Taylor et al. 2023), I placed two bars of the size on the image to judge the approximate width of the room.

4. In the interest of protecting the identities and privacy of the current occupants, we've restricted identifying information.

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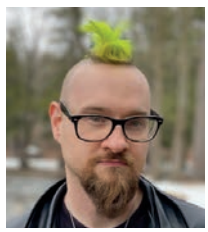
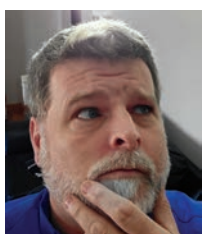


JD Sword is an investigator and host of the podcast *The Devil in the Details*.



Kenny Biddle is a science enthusiast who investigates claims of paranormal experiences, equipment, photos, and video. He promotes science, critical thinking, and skepticism through his role as the Committee for Skeptical Inquiry's chief investigator.

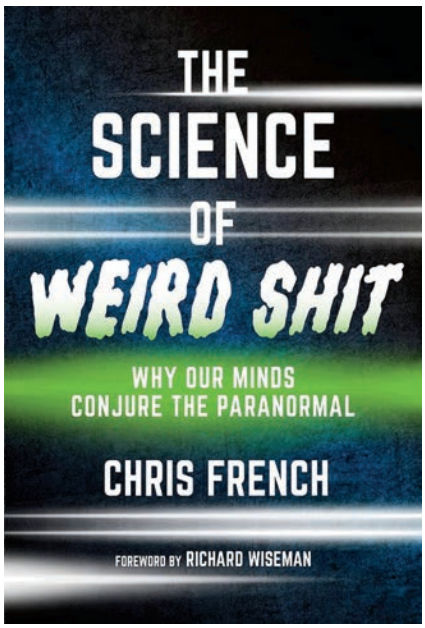
Weird Shit Explained

James E. Alcock

From Ghoulies and Ghosties,
And long-leggedy Beasties,
And things that go bump in the Night,
Good Lord deliver us.
—Traditional Scottish Prayer

Experience is a great teacher; it guides our behavior, influences our emotions, shapes our beliefs and—in combination with what we learn from others—establishes a stable model of the world around us. However, its lessons are based on our *interpretations* rather than the experiences themselves, and those interpretations are affected by myriad cognitive, neurological, and cultural influences and biases. And so, it is a great teacher—except when it is not. Experiences that seem bizarre and incomprehensible—Chris French's "weird shit"—are often extremely poor guides to reality, leading to fallacious magical, paranormal, and supernatural attributions. Because human brains are pretty much the same everywhere, similar sorts of experiences—telepathy, precognition, psychokinesis, gods, ghoulies, ghosties, and the like—have been reported in every culture and every era and have become woven into the rich fabric of shared belief.

By the late nineteenth century, as science was proving to be a powerful tool for unlocking nature's secrets, attempts were made to apply its methods to the study of putative paranormal phenomena, including supposed communication with the dead (which was very much in fashion at the time). Initial efforts involved the collection and analysis of reports of such experiences, but this approach ultimately proved futile as accumulating evidence demonstrated the unreliability of anecdotal accounts. Then, impressed by the successful application of scientific methods by experimental psychologists, researchers shifted their interest from spontaneous



The Science of Weird Shit: Why Our Minds Conjure the Paranormal by Chris French. Cambridge, MA: MIT Press, 2024. ISBN: 9780262048361. 424 pp. Hardcover, $32.95.

experiences to attempts to produce evidence of paranormal phenomena under laboratory conditions. On the downside, however, experimentation involves artificial situations that generally have little relevance to the emotion-laden personal experiences that people interpret as paranormal.

French, head of the Anomalistic Psychology Research Unit in the Psychology Department at Goldsmiths, University of London, points out that while the laboratory approach has failed to produce confirmatory evidence of the paranormal, it is important not to throw out the baby with the bathwater. That is, we should not ignore bizarre "anomalistic" experiences simply because they are not paranormal in origin. He asserts, as the primary thrust of this book, that such experiences result from psychological and neurological processes of which the individual is unaware as the brain tries to make sense of the world around it. By studying these experiences, we can gain important insights into brain function.

The book begins with a description of the influences that propelled French on his journey from being an avid believer in the paranormal to the rejection of such beliefs to becoming a leading skeptic and the founder of a university unit dedicated to the study of anomalistic psychology. This experiential history has prepared him to be an ideal author for a book such as *The Science of Weird Shit: Why Our Minds Conjure the Paranormal*. Rather than simply treating paranormal belief as the product of sloppy thinking or rampant irrationality, he demonstrates a deep understanding of what draws people to such belief. He also points out that some culturally shared paranormal beliefs—for example, reincarnation—can serve important functions for both the individual and the society.

Drawing both on his own research and his considerable reservoir of psychological knowledge, French explains how the brain occasionally produces anomalous experiences that are then misinterpreted as being paranormal. Various chapters explore a wide range of such experiences, from telepathy and precognition to ghosts and near-death experiences to alien encounters and reincarnation. He makes the important observation that our brains cannot always distinguish between information from the outside world and information that arises from nonconscious regions of the brain itself. A good example of this is sleep paralysis, in which a sleeping individual mistakes internal nightmare-like imagery for veridical perception of the external world, resulting in powerful, frightening experiences that

Image Credit: bonciutoma - Adobe Stock

seem to involve a ghostly visitor or an alien abduction. French devotes a full chapter to this subject.

One of the most important chapters in the book is dedicated to the discussion of how powerful coincidences can overwhelm reason. Our brains are wired to search for a causal relationship when two noteworthy events occur closely together, and it can be very upsetting when there is no obvious rational explanation. This feeds the craving for understanding, and for many the craving is satisfied by resorting to a paranormal attribution, although the paranormal label does not in itself explain anything. Sometimes there are unrecognized reasons for the coincidence, but much of the time coincidence is just coincidence—and we often underestimate the likelihood of a given coincidence. While it is not so unlikely that *someone* in the world will dream about an airplane crash and then wake in the morning to the news that there has been such a crash, when *you* are that someone, the coincidence may seem bewilderingly unlikely, leading to an attribution of precognition.

The strong emotional *frisson* produced by a striking coincidence can overwhelm the critical thinking skills of even the most seasoned and skeptical critical thinker. French cites the example of psychologist David Marks, a notable skeptic in his own right who, while asserting that there is no scientific evidence that paranormal phenomena are real, was so struck by a personal coincidence that he posits that paranormal events may on occasion spontaneously occur. This brings to mind uber-skeptic Paul Kurtz, the founder of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP, now the Committee for Skeptical Inquiry or CSI) who, after asserting during a television interview that there is no scientific evidence for the existence of paranormal phenomena added, "with the possible exception of extrasensory perception (ESP)!" Kurtz based this exception on perplexing personal experience: On several occasions, he told the interviewer, just as he was about to mention some event to his wife, she mentioned it first! He could find no explanation for this, except for possible ESP. Even after subsequently being informed of how such experiences are to be expected from time to time—the products of a shared history that occasionally leads to similar trains of thought triggered by an unrecognized stimulus—Kurtz was unconvinced and later repeated the same comment during another television interview.

When intelligent, well-informed critical thinkers such as Marks and Kurtz succumb to the power of coincidence, this is a warning about our own susceptibility when confronted by experiences that seem to defy normal explanation. French urges us to recognize the "fundamentally irrational and emotional sides of ourselves" and acknowledge that we all are vulnerable to having our reason overwhelmed by unusual experience. In this regard, he observes that even many so-called psychics, rather than being conscious frauds, fool themselves as much as they do others because their experience has led them to believe that they really do possess such powers.

The content of this book is excellent, but what about the presentation? Even the best content can be presented in a manner that is dull and boring, preachy and condescending, or mind-numbingly technical. This is certainly not the case here, for French teaches rather than preaches and entertains while he explains, all the while eschewing technical language and employing illustrative, real-life examples to enliven his lessons. And just as in a good novel, his lively discourse continually draws the reader forward, leaving one eager for more. And for those who might wish to delve deeper into the subject matter, he supplies extensive references.

I highly recommend this book to everyone—from readers just beginning an exploration of weird shit to informed skeptics who may think that they have "heard it all already" to those who are convinced that paranormal phenomena are real. Readers will learn much about the importance of critical thinking and about how science actually works, but most importantly they will profit from French's analysis of how psychological and neurological processes at times conjure up the paranormal and lead us down false explanatory trails. *Weird Shit* is not so weird after all, for it turns out to be the natural product of our brains. And so farewell, ghoulies and ghosties; we no longer need you to make sense of the world. Be off with you! ■

James E. Alcock is professor emeritus of psychology at York University. He is a member of the Executive Council, Committee for Skeptical Inquiry, and author of *Parapsychology: Science or Magic?* (Pergamon, 1981), *Science and Supernature* (Prometheus Books, 1990), and *Belief: What It Means to Believe and Why Our Convictions Are So Compelling* (Prometheus Books, 2018).

Disney's *Wish*: A Century of Wishing on Stars

Carli Yingling

Last October marked Disney's hundredth year. As part of the anniversary celebration, the studio leaned into the idea of wishing upon a star, which first appeared in their second theatrical animated feature film, *Pinocchio* (1940). The hit song "When You Wish Upon a Star" quickly became popular, winning the Academy Award for best original song. Although the introduction for Disney movies has been reimagined many times since, the studio has continuously showcased the now iconic image of the Disney castle below a shooting star, paired with the inspirational song. Wishing itself has also continued to be a throughline across many Disney films.

As part of its 100 Years of Wonder celebration, Disney released the film *Wish*, available now for streaming on Disney+. I was excited to experience the wonder of this film with my six-year-old daughter on the big screen. In addition to entering the theater as a mom, I also entered as a skeptic, having recently taken college courses on pseudoscience and critical thinking. I was curious to see what type of treatment the studio would give the superstitious behavior of wishing now that we are nearly a century away from the release of *Pinocchio*.

The film has a foot in both worlds of pseudoscience and science. On the pseudoscience side—and as we've come to expect with Disney movies—there's plenty of magic, including spells, potions, and wands. The shooting star becomes a character itself, spreading magical dust; in line with tradition, this dust gives animals the ability to talk as they befriend the protagonist, Asha. The talking animals represent all the Disney Princess films with one fell swoop. On the science side, however, many of the lyrics in "You're a Star" would probably make Neil deGrasse Tyson happy:

Wish. The Walt Disney Company. Released November 8, 2023

> When it comes to the universe, we're all shareholders
> Get that through your system (Solar!)
> See we're all just little nebulae in a nursery
> From supernovas, now we've grown into our history
> We're taking *why*'s right out of mystery, closure
> Now we're taking in all the star exposure!
> We eat the leaves, and they eat the sun
> See that's where all the balls of gas come from

In addition to the music, another fun aspect of *Wish* is the many subtle Easter eggs that represent the large library of previous Disney films. Many of them relate to the idea of wishing upon a star and the dreams that wishes represent. For example, one of the villagers wishes he could visit a magical land in the sky, reminiscent of Peter Pan, and another villager wishes he could fly. Other Easter eggs evoke the crew of Disney movie villains as represented by traits of *Wish*'s villain, King Magnifico. You just can't help but see other villains come to life though his evil mannerisms.

Key to the story is Magnifico's recognition of the power of wishes. Everyone in his kingdom gets to make one wish that he keeps safe, occasionally granting some during special ceremonies. We quickly learn, though, that Magnifico is only willing to grant the wishes that help maintain his power. Magnifico also comes to realize the power held by the personified wishing star. He attempts to steal the star to harness its power. You'll have to watch the movie yourself to learn if he's successful or if Asha, the other villagers, and the talking animals realize that the most important stars are the stars they hold within themselves.

During the movie, I was struck by the fact that Disney made a bold move, seeming to counteract their longtime tradition of promoting the idea that simply making a wish can make all your dreams come true. In this movie, wishes are treated more like fantasy, and only the wish-maker can truly make their own dreams become a reality. That is, wish-makers must put in some work! The movie similarly suggests that you can't rely on someone else to make your dreams come true; you must act yourself. This notion is perhaps best represented by the song lyrics "It's all quite revelatory: we are our own origin story."

The skeptic in me was able to look past all the magic and superstition to enjoy the down-to-earth primary message of the story. My daughter spent much of the movie in tears moved by the mix of emotions, caused by the characters' unfortunate circumstances while simultaneously expressing her distaste for Magnifico. She was bewildered about how one individual could be so selfish or evil to those around him. She frequently berated the screen for his actions. We both walked away with a little more wonder in our lives, and we also had a better idea about how to best make our own dreams come true. ■

Carli Yingling is a U.S. Army veteran and psychology student at Southern Illinois University Edwardsville.

FUN & GAMES

Edited by Stephen Hupp

YOU CAN FIND THE ANSWERS TO THESE GAMES IN SECRETS REVEALED (P. 66).

1	2	3	4
2			
3			
4			

Find 3 groups of 3 connections...

GHOST-BUSTERS	OUIJA	BEETLE-JUICE
POLTER-GEIST	TALKING	CASPER
SLIMER	PARA-NORMAN	SPIRIT

CONNECTIVITY

These words can be divided into three categories, each with three words. They are all connected by a single theme. Can you discover all three categories and identify the theme? Your brain is great at finding patterns—sometimes this helps, but other times it hurts!

Credit: Maria - Adobe

SKEPTICROSS

Note: The ghosts in Pac-Man operate based on an early form of artificial intelligence: the pink ghost and the light-blue ghost both move to get in front of Pac-Man, the red ghost always chases, and the orange ghost alternates between chasing and running away.

ACROSS

1. Flower matching Blinky's color
2. Light-blue ghost
3. One of Clyde's behaviors
4. Parts left of ghosts when eaten

DOWN

1. The game is __ with danger
2. Ms. Pac-man is his one and ___
3. Ball game often found nearby
4. Keep these open when playing

ANTIQUE MALLARKEY

Acquired from an antique mall in central Illinois, William Fuld's OUIJA Mystifying Oracle (sold by Parker Brothers from 1966–1972) can be used for "mind reading, clairvoyance and second sight." Born in 1870, William Fuld has been called the "Father of the Ouija Board," not because he invented talking boards (also called "spirit boards") but because of his aggressive trademarking, marketing, and popularizing of the word *Ouija* (including the Ouija Oil product used for pain). The directions of this particular board state that "OUIJA® talking board is a great mystery, and we do not claim that at all times and under all circumstance it will work equally well, but we do claim that with reasonable patience and judgement it will satisfy your greatest expectations."

Bigfoot

I just finished reading Ben Radford's article "Is Bigfoot Dead?" in the January/February 2024 Skeptical Inquirer. While I typically find Bigfoot hunting and hunters relatively uninteresting (Where are all the bodies/bones?), Radford's article is exceptionally well-written and thoroughly researched. I have often heard Bigfoot enthusiasts reference ancient Native American legends about something "big, dark, and hairy" living in remote regions, using this as evidence to support their claims. However, I believe this "creature" has appeared in various folk legends from around the world, suggesting a universal fear of "The Other" driving these narratives. What Radford enlightens us about this story is the overwhelming quantity of hoaxers, deceivers, and believers, far outweighing any substantial quality evidence.

Brian Hart
Los Angeles, California

Politics in SI?

At first blush, the January/February 2024 issue seemed to be full of unmitigated good news: the demise of belief in Bigfoot, chemtrails, biorhythms, the Mozart effect, and the silent chamber of insanity. But, upon reflection, I began to mitigate.

Believers in these odd ideas have been few and fragmented, and their main audiences were others who shared their particular obsessions. They were basically harmless. It might even be argued that they provided a net benefit to society as a source of humor, because hardly anybody took them seriously.

But where do they go once their subject matter evaporates? They haven't vanished altogether, and it's most unlikely that they've all been suddenly smitten with a fit of rationality. I hypothesize that they've migrated to a more dangerous sphere: politics. Here the delusionaries and conspiracists find fertile ground for their fact-free activism, and in this realm they're no longer spattered and scattered like beads of mercury. They're consolidating into a large blob that can wield real power over the lives of their fellow citizens.

I know Skeptical Inquirer has largely remained aloof from partisan controversies, but it seems to me that what's going on in the country these days needs a good, heathy dose of the kind of honest, fact-based critical thinking that's been your stock in trade since the days of *The Zetetic*. We will be in dire straits if the nation falls under the sway of people in power who think that reality is dispensable if it disagrees with their agenda. With your traditional subject matter withering away, are you up for this new challenge?

Richard S. Russell
Madison, Wisconsin

Editor Stephen Hupp responds:

Thanks for sticking with this magazine since the days when it was called The Zetetic*! Readers like you have kept SI going strong long before I was editor (with a tip of the hat to Ken Frazier). We're just a few issues away from publishing our 250th issue, January/February 2025, and I've been joyfully going back and reading the old issues myself. It's fun to see the ways the magazine stayed the same and the ways it has evolved. Topics such as politics do come up from time to time in these pages (including in this very issue), and they will continue to do so. We aren't a political magazine, and so the conversation will be centered on the science (and the pseudoscience) rather than the politics,* per se. *Sometimes articles in this magazine critique scientific claims made by those on the political Right, and sometimes it critiques claims made by those on the Left. We'll continue doing our best to keep the science front and center. Although our January/February 2024 cover declared Bigfoot dead, I disagree with the claim that our traditional subject matter is withering away. Belief in the paranormal is alive and well. True, it will be interesting to see if there really is a bright side to artificial intelligence when it comes to critical thinking (as this issue's cover suggests), but I bet it will be a long time before our traditional subject matter evaporates, and so we'll keep writing about paranormality, superstition, cryptozoology, UFOs, pseudoscience, and quackery. At the same time, we'll continue addressing political claims when they intersect with science, pseudoscience, and everything in between.*

Image Credit: Edward Ollie

Socrates's Choice

In "Grimcutty Reveals Dark Thread Tying Together Cases of Moral Panic" (January/February 2024), David Tolkacz writes that Socrates was pressured to end his life on the grounds that he was "poisoning the children." Publicly, Socrates was charged with speaking against the gods and corrupting the youth of Athens. But the unmentioned charges were the war crimes of Socrates. He had conspired to create a counterrevolution against Athenian democracy. The trial was intended to frighten Socrates enough to leave Athens and stop weakening Athenian democracy by criticizing the government in public places. Athenians didn't want the death sentence upon him, and they didn't want to make him a martyr. Socrates could have avoided death by leaving Athens before the trial began. In fact, it was the custom at that time when acquittal in a trial appeared doubtful. But Socrates refused to leave, and he was sentenced to death. Because he was detained for a month before he had to drink the hemlock, Socrates could easily have escaped with the help of his friends. But he believed he had helped the Athenian public and would not compromise his view. To him, escaping would be morally wrong and an admission of guilt. In other words, he chose to kill himself.

Rosalyn Becker
Fort Myers, Florida

The Sound of Silence

Re: "Investigating the Silent Chamber of Insanity" (January/February 2024). The silent chamber, which is said to offer an experience of silence that can drive people insane, is in fact my daily experience—as a deaf person. Each evening, I remove my cochlear implant transmitter and hearing aid and experience total silence, until eventually sleeping and then awakening to a comfy, quiet reverie. So far, I'm still sane (I think)!

David Myers
Holland, Michigan

SECRETS REVEALED

DID YOU SPOT THE HIDDEN IMAGE ON THE COVER?

Connectivity Answer

Group #1: *Ghostbusters*, *Poltergeist*, and *ParaNorman* are movies about ghosts.

Group #2: Beetlejuice, Casper, and Slimer are ghosts.

Group #3: Ouija boards, talking boards, and spirit boards are ways to communicate with ghosts (and they're all mentioned in the ANTIQUE MALLARKEY section).

Theme: GHOSTS

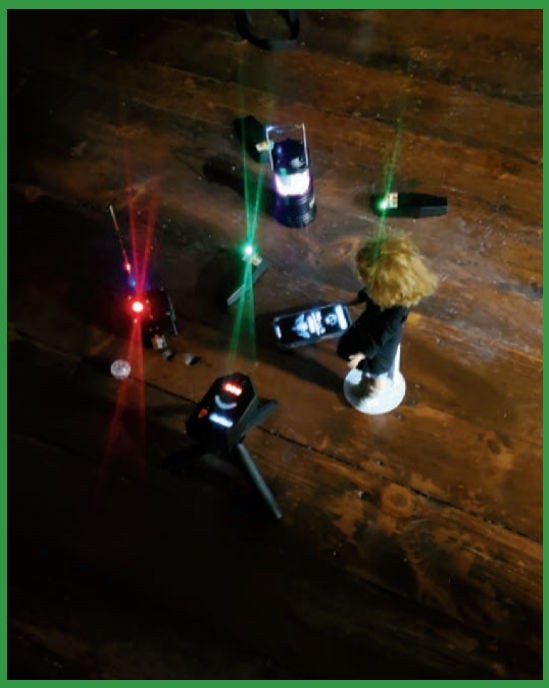
Image Credit: Cirkus - Adobe Stock

Skepticross Answer

1 R	2 O	3 S	4 E
2 I	N	K	Y
3 F	L	E	E
4 E	Y	E	S

Peek Inside William Fuld's OUIJA Mystifying Oracle Set

See a Photo from the Page 4 Paranormal Investigation



A Few Words on the Shift Cipher

VA GUR YNFG VFFHR
UVQR ZNAL TERNG SVAQF

GUR TERNGRFG BS NYY
VAIBYIRF ERNQVAT ZVAQF

XRRC ERNQVAT GURFR JBEQF
SBE CYRAGL BS GVCF

SEBZ GUR ORTVAAVAT
ZNXR GUVEGL-GUERR SYVCF

SVAQ GUR CNTR GUNG SRRYF
N WHFG OVG QVEGL

ABJ FUVSG LBHE RLR TNMR
GB FRIRA-GUVEGL

N SVIR-QVTVG PBQR
YVRF EVTUG VA CYNVA FVTUG

ABJ QB GUERR ONPXSYVCF
GB URYC VA LBHE CYVTUG

GUR NAFJRE PBZRF VA
GUR SBEZ BS N GBL

PBYBESHY CYNFGVP
PBAARPGNOYR WBL

FRAQ VA GUR NAFJRE
NF N JRO YRGGRE

FHERYL LBHE YVSR JVYY
TRG N OVG ORGGRE

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THE MYTHS OF ENDLESS ENERGY
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